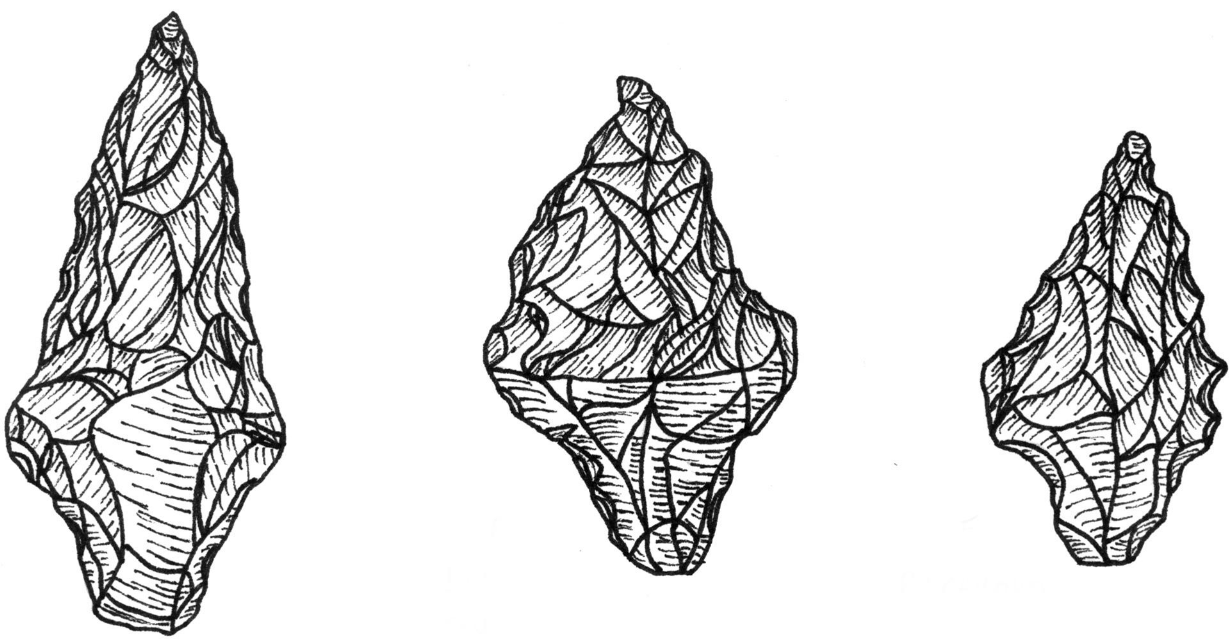
An Overview and Analysis of the Middle Archaic in Georgia

Prepared for:
Georgia Department of Transportation
Office of Environment/Location
3993 Aviation Circle
Atlanta, Georgia 30336

September 2009



OCCASIONAL PAPERS IN CULTURAL RESOURCE MANAGEMENT #16

Brockington
Cultural Resources Consulting

AN OVERVIEW AND ANALYSIS OF THE MIDDLE ARCHAIC IN GEORGIA

Prepared for:
Georgia Department of Transportation
Office of Environment/Location
3993 Aviation Circle
Atlanta, Georgia 30336

Through the firm of:
Greenhorne & O'Mara, Inc.,
2121 Newmarket Parkway, Suite 100
Marietta, Georgia 30067

Prepared by:
Sudha A. Shah, M.A., RPA
and

Thomas G. Whitley, Ph.D., RPA
Principal Investigator

September 2009

OCCASIONAL PAPERS IN CULTURAL RESOURCE MANAGEMENT #16

Brockington and Associates, Inc.
Atlanta • Charleston • Savannah • Pensacola • Elizabethtown • Eddyville

Georgia Department of Transportation
Occasional Papers in Cultural Resource Management

The Georgia Department of Transportation's (DOT) *Occasional Papers in Cultural Resource Management* series consists of archaeological and historical research sponsored by the Georgia DOT. These reports have been produced by Georgia DOT in-house cultural resource staff and by consultants under contract with the Georgia DOT. Reports within the series present information ranging from cultural resource contextual themes to specific data associated with historic properties considered eligible for the National Register of Historic Places that would be affected by transportation projects.

Each report addresses research questions and the conclusions and interpretations contained therein reflect the theoretical orientation, background, and assorted biases of the authors. Each manuscript has been prepared as a result of a project with Georgia DOT. The reports are distributed by the Office of Environment/Location, Georgia Department of Transportation.

For a copy of any or all of the reports, please indicate the specific report; there may be a minimal charge for copying if the report is out of print.

Georgia Department of Transportation
Occasional Papers in Cultural Resource Management

No. 1 - *Archaeological Investigations at 9CK(DOT)7, Cherokee County, Georgia;* by William R. Bowen (1982).

No. 2 - *Cagle Site Report: Archaic and Early Woodland Period Manifestations in the North Georgia Piedmont;* by Morgan R. Crook, Jr. (1984).

No. 3 - *Lowe Site Report: A Contribution to Archaeology of the Georgia Coastal Plain;* by Morgan R. Crook, Jr. (1987).

No. 4 - *Rush: An Early Woodland Period Site in Northwest Georgia;* by W. Dean Wood and R. Jerald Ledbetter (1990).

No. 5 - *A Few Visits in Prehistory: Data Recovery at 9RH18, Randolph County, Georgia;* by Christopher T. Espenshade (1993).

No. 6 - *The Pig Pen Site: Archeological Investigations at 9RI158, Richmond County, Georgia;* by R. Jerald Ledbetter (1988).

No. 7 - *Data Recovery at Lovers Lane, Phinizy Swamp and the Old Dike Sites, Bobby Jones Expressway Extension Corridor, Augusta, Georgia;* by Daniel T. Elliott, R. Jerald Ledbetter, and Elizabeth A. Gordon (1994).

No. 8 - *The Victory Drive Site, 9ME50, Muscogee County, Georgia;* by R. Jerald Ledbetter (1997).

No. 9 - *The Bull Creek Site, 9ME1, Muscogee County, Georgia;* by R. Jerald Ledbetter (1997).

No. 10 - *An Archeological Survey of the Shoulderbone Tract, Hancock County, Georgia;* by Thomas J. Pluckhahn (1997).

No. 11 - *Prehistory of the Stuckey Tract, Bleckley County, Georgia;* by Scot Keith (2006).

No. 12 - *Archeological and Historical Investigations at Battery Hamilton (9CH953), Chatham County, Georgia;* by Chad O. Braley (2003).

No. 13 - *The Early Vegetable Tanning Industry in Georgia: Archaeological Testing at the Clinton Tannery (09JO282), Jones County, Georgia;* by Daphne L. Owens and Daniel E. Battle (2008).

No. 14 – *The Late Archaic to Early Woodland Transition in Northwest Georgia: Evidence for Terminal Archaic (ca. 1100 – 600 B.C.) Period Occupation in the Region*; by Jerald Ledbetter, Lisa D. O'Steen, and Scott Jones (2009).

No. 15 – *A Look Into the Outlands: The Cultural Landscape of the Dougherty Plain of Georgia*; by R. Jeannine Windham, Johannes Loubser, and Mark Swanson (2009).

No. 16 – *An Overview and Analysis of the Middle Archaic in Georgia*; by Sudha Shah and Thomas Whitley (2009).

PREFACE

This study seeks to provide a research context for the examination of Middle Archaic sites and cultural materials within Georgia prehistory. To accomplish this goal, the authors examine research questions that have been posed by previous researchers (and by themselves) and attempt to address and/or answer these with the information gathered from sites dating to the Middle Archaic in the Piedmont region of Georgia. From examining Caldwell's identification of "Old Quartz" to charting occupational variability at a recently excavated site in Henry County, Shah and Whitley have synthesized data from previous and more current investigations, have analyzed theories and methodologies, and have approached the study of Middle Archaic sites with new tools while they offer new ideas for improving the research of this vague slice of cultural time.

This project has proven that Middle Archaic research is only at its beginning, even after archaeologists have performed years of work at sites in Georgia. Much of the work has been survey-level work, however, and it is hoped that this framework for research and investigation will encourage more testing and data recovery projects at what are sometimes considered less substantial, more specialized sites. This study also points out the potential for examining variability where it seems little to none exists and for considering the definition of occupation in terms of time and space. Shah and Whitley discuss the environment, material culture, settlement patterns and mobility strategies, subsistence, and social organization, in an effort to understand the 3,000 years of prehistory included in the time known in Georgia as the Middle Archaic.

The Georgia Department of Transportation is happy to publish *An Overview and Analysis of the Middle Archaic in Georgia* as Report Number #16 in its Occasional Papers in Cultural Resource Management series.

Pamela A. Johnson
Archaeologist
Georgia Department of Transportation

MANAGEMENT SUMMARY

This study provides an overview and analysis for the Middle Archaic cultural period in Georgia. This study is organized into eight sections, beginning with a short discussion on definitional criteria, an environmental overview, and general Archaic and Middle Archaic site distributional research considerations. This is followed by an outline of Middle Archaic research history and an overview of the topics of traditional inquiry. Results from a Geographic Information Systems analysis using data from the Georgia Archaeological Site Files are presented, as are significant insights from recent excavations at site 9HY321. The study ends with a summary of the preservation and research priorities.

TABLE OF CONTENTS

PREFACE iii

MANAGEMENT SUMMARY v

LIST OF FIGURES ix

LIST OF TABLES x

1.0 INTRODUCTION 1
1.1 SCOPE AND OBJECTIVES 1
1.2 DEFINING THE ARCHAIC PERIOD 1
1.2.1 The Late Paleoindian to Early Archaic Transition 2
1.2.2 The Late Archaic to Early Woodland Transition 2
1.3 DEFINITIONAL RESEARCH CONSIDERATIONS 3

2.0 THE ARCHAIC ENVIRONMENT 5
2.1 REGIONAL PHYSIOGRAPHY AND GEOLOGY 5
2.2 EARLY TO MIDDLE HOLOCENE ENVIRONMENTAL HISTORY 9
2.2.1 Rising Sea Levels 9
2.2.2 Reconstructing Environment 10

3.0 THE ARCHAIC ARCHAEOLOGICAL RECORD IN GEORGIA 15
3.1 TEMPORAL MARKERS AND THE DISTRIBUTION OF ARCHAIC COMPONENTS IN GEORGIA 15
3.1.1 Diagnostic Projectile Points 15
3.1.2 Diagnostic Ceramics 23
3.1.3 Soapstone as a Temporal Marker 24
3.2 PATTERNS IN ARCHAIC SITE DISTRIBUTION 26
3.3 DISTRIBUTIONAL RESEARCH CONSIDERATIONS 33

4.0 GEORGIA'S MIDDLE ARCHAIC CULTURAL RESOURCES 35
4.1 THE ARCHAEOLOGICAL DATABASE 35
4.2 SOME KEY INVESTIGATIONS 36
4.2.1 Clark Hill River Basin Survey and Excavations at the Lake Springs Site (9CB22) 36
4.2.2 Stone Mountain Site DA-4 (9DA9) 37
4.2.3 Sixtoe Field (9MU100) 38
4.2.4 Orkin Site (9CN27) 39
4.2.5 Sibley Lithic Station (9CO126) 39
4.2.6 Gregg Shoals Site (9EB259) 39
4.2.7 Rae's Creek (9RI327) 40
4.2.8 Phinizy Swamp (9RI178) 41
4.2.9 Ocmulgee Wildlife Management Area, Archaeological Data Recovery at Site 9PU57 41

4.2.10 Jack Straw Site (9BI129) 42
4.2.11 Blue Ridge Reservoir Reconnaissance and Survey 42
4.3 DISCUSSION 42

5.0 MIDDLE ARCHAIC RESEARCH CONCERNS 45
5.1 A HISTORICAL PERSPECTIVE ON RESEARCH 45
5.2 SETTLEMENT PATTERNS AND MOBILITY STRATEGIES 47
5.3 EXPLAINING AND MODELING SETTLEMENT PATTERNS 48
5.4 MATERIAL CULTURE 51
5.5 SUBSISTENCE PATTERNS 53
5.6 SOCIAL ORGANIZATION, EXCHANGE, AND TERRITORIALITY 55
5.7 RITUAL AND MORTUARY PRACTICES 56

6.0 MIDDLE ARCHAIC GIS ANALYSES 57
6.1 AVERAGE NEAREST NEIGHBOR ANALYSIS 57
6.2 SITE DISTANCES TO PHYSIOGRAPHIC BOUNDARIES 61
6.3 OTHER ANALYSES AND RECOMMENDATIONS FOR FUTURE RESEARCH 64

7.0 INVESTIGATING MIDDLE ARCHAIC OCCUPATIONAL VARIABILITY 67

8.0 PRESERVATION AND RESEARCH PRIORITIES 81
8.1 RECOMMENDATIONS FOR NRHP EVALUATION 81
8.2 PRIORITIES FOR RECOMMENDING SITES TO THE NRHP 82
8.3 RESEARCH PRIORITIES 83

REFERENCES 85

APPENDIX: MIDDLE ARCHAIC NRHP-ELIGIBLE ARCHAEOLOGICAL SITES IN GEORGIA

LIST OF FIGURES

Figure 2.1 Physiographic map of Georgia. 6
Figure 2.2 Relative abundance of selected species by period in the Piedmont and Coastal Plain physiographic provinces of Georgia (extracted from Leduc 2003). 13
Figure 3.1 Diagnostic projectile point date ranges in Georgia (extracted from Whatley 2002). 16
Figure 3.2 Distribution of common Early Archaic diagnostic projectile point types. 17
Figure 3.3 a Middle Archaic projectile points. 18
Figure 3.3 b Middle Archaic projectile points (continued). 19
Figure 3.3 c Middle Archaic projectile points (continued). 20
Figure 3.4 Distribution of common Middle Archaic diagnostic projectile point types. 21
Figure 3.5 Distribution of common Late Archaic diagnostic point types. 22
Figure 3.6 Distribution of recorded occurrences of Late Archaic fiber-tempered ceramics. 25
Figure 3.7 Distribution of all recorded Archaic sites in Georgia. 27
Figure 3.8 Distribution of all recorded Archaic sites in Georgia by temporal subperiod. 28
Figure 3.9 Distribution of all recorded Archaic sites in Georgia by county (raw quantity). 29
Figure 3.10 Distribution of all recorded Archaic sites in Georgia by county (percentage of total sites recorded). 30
Figure 3.11 Distribution of all recorded Archaic sites in Georgia by physiographic district (number per square mile). 31
Figure 3.12 Distribution of all recorded Archaic sites in Georgia by physiographic district (percentage of total sites per square mile). 32
Figure 6.1 Distribution and significance of site clustering for individual cultural periods. 60
Figure 6.2 Mean distance to physiographic boundary by cultural period. 63
Figure 6.3 Percentage of sites for each series of distance classes and each cultural period. 66
Figure 7.1 Plan map of 9HY321 showing the location of Phase I, Phase II, and Phase III shovel test and test unit excavations conducted by Southeastern Archeological Services (SAS) and Brockington and Associates (BA). 68
Figure 7.2 Density distribution of all flaked stone artifacts. 70
Figure 7.3 Density distribution of flaked stone artifacts made on locally-available raw materials. 71
Figure 7.4 Density distribution of flaked stone artifacts made on non-local raw materials. 72
Figure 7.5 Density distributions of non-local overlaying local flaked stone artifacts. 73
Figure 7.6 Density distributions of late stage reduction debris. 75
Figure 7.7 Density distributions of early stage reduction debris. 76
Figure 7.8 Density distributions of early stage and late stage reduction debris. 77

LIST OF TABLES

Table 2.1 Georgia chert types (adapted from Goad 1979). 7
Table 2.2 Quartz raw material types (adapted from Jones 2006). 9
Table 6.1 Average Nearest Neighbor Analysis 59
Table 6.2 Distance to Physiographic Edge Analysis - Spatial Statistics 62
Table 6.3 Distance to Physiographic Edge Analysis - Distance Categories 65
Table 6.4 Chi-Square Analysis of Distance to Physiographic Edge 65

APPENDIX
Table 1 Single component NRHP-eligible Middle Archaic sites in Georgia (as of October 2007) A1
Table 2 Middle Archaic resources within NRHP-eligible multiple component archaeological sites in Georgia (as of October 2007) A8

1.0 INTRODUCTION

1.1 SCOPE AND OBJECTIVES

By late October 2007, the Georgia Archaeological Site Files (GASF) had collected information on 47,947 archaeological sites in the state. These sites contained 81,713 identifiable cultural components, of which 10,172 are attributed to some portion of the Archaic Period. Based on these numbers, the Archaic constitutes over 12 percent of all recorded sites in the state, and by proportion is more highly represented than any of the other prehistoric temporal periods. Archaic sites are found in all of Georgia's physiographic regions and in every major environmental zone and habitat.

The objective of this overview and analysis is to provide a research context for the Middle Archaic subperiod in Georgia. A goal is to develop insights into the research questions that have yet to be addressed or answered. With this in mind, the report will not itemize all previous archaeological investigations conducted in the state, but rather synthesize available data in order to highlight gaps in our understanding and chart new directions into data gathering strategies that would be most productive in generating answers to significant research issues. A second goal is to examine how archaeologists have approached Middle Archaic sites and suggest areas for improvement in the management of these important cultural resources.

The level of coverage will be statewide at the outset, with the focus narrowing to regional and local datasets wherever it becomes critical to illustrate concepts or provide detailed examples. Primary synthetic details will be provided by querying the GASF database through a Geographic Information System (GIS).

1.2 DEFINING THE ARCHAIC PERIOD

The Archaic has traditionally been distinguished from the preceding Paleoindian Period as the development of cultural adaptations to post-Pleistocene environments. The term "Archaic" was first employed by William Ritchie (1932) in reference to early pre-ceramic sites in New York State. This term was quickly adopted by archaeologists working across Eastern North America to define sites lacking ceramic assemblages. However, by 1948, controversy was already brewing over what the term entailed. Sears, (1948:122), for instance, points out that "[s]ince its inception by Ritchie the term 'The Archaic' or 'The Archaic Pattern,' has seen considerable usage. However, it appears that the definition or delineation of this pattern, as it exists, is not serviceable."

The designation was originally intended by Ritchie as a categorical reference to archaeological assemblages that seemed to represent a shared set of cultural characteristics:

> The long postulated archaic level in New York recently confirmed by intensive work in the Southeast consists of an aggregate of discrete loci, sharing a hunting-fishing-gathering economy. Its chief characteristics are the absence of horticultural traces, ceramics, and the smoking pipe (Ritchie 1944:321).

In other words, sites identified as Archaic were initially defined by vague references to shared characteristics, but more specifically by the kinds of material culture and archaeological evidence they *lacked*. As Sears (1948) pointed out, defining sites by the absence of traits is untenable as a diagnostic tool. Eventually the widespread "Archaic Pattern" gave way to a cultural chronology based on the stylistic attributes of lithic projectile points. In Georgia, diagnostic point types provided a general time frame of 10,000 to 3000 BP for this period, with the subdivisions of Early Archaic (10,000 to 8000 BP), Middle Archaic (8000 to 5000 BP), and Late Archaic (5000 to 3000 BP). Although these dates vary somewhat from one physiographic province to another, the transition between subperiods among regional variants is often diffuse, and for our purposes here the general date range is adequate.

Whether widespread (and often poorly defined) point styles can be accepted as strong indicators of cultural affinity over areas as large as the physiographic provinces of Georgia, however, has never been established. Moreover, classifying projectile points into broad stylistic categories can be problematic, not to mention drawing inferences about cultural connectivity or commonality from stylistic evidence. We need to ask, therefore, if the Archaic Period holds the integrity of a single subsistence-settlement pattern as Ritchie originally intended, or does the Archaic merely represent a broad range of time within which obvious markers of cultural change are too few and far between? To answer these questions, we need to examine some principal assumptions about the Archaic and how it differs from periods preceding and following it. While these assumptions are summarized below to illustrate the limitations of definitional concepts, they will also be revisited in later sections of this context as we focus on the Middle Archaic subperiod.

1.2.1 The Late Paleoindian to Early Archaic Transition

The primary assumption underlying the transition from the Paleoindian to the Archaic Period (around 10,000 BP) is that climatic change coincided with a decline in the availability of large-bodied herbivores. Climate change is thought to have either directly brought about the demise of many large-bodied herbivores, or more indirectly, resulted in an intensification of hunting patterns during the Late Pleistocene to the point at which faunal populations were no longer sustainable. More recent reflection suggests that a combination of many factors may have contributed to the adaptive response of the Early Archaic hunters in the exploitation of smaller-sized mammals that were more readily available and exhibited less migratory behavior (Elliott and Sassaman 1995). The subsistence pattern shifted from one of specialization to a more generalized approach in the collection of food resources.

Research by Chapman and Shea (1981) suggests the exploitation of a broad range of local resources was probably achieved at a much earlier date than previously believed. They suggest trends in settlement and subsistence practices through the Archaic Period may be best interpreted as resulting from an adaptive response to a combination of cultural and environmental changes. A more generalized approach to hunting and gathering may be responsible for technological changes in projectile point types, particularly from the use of large, lanceolate, and fluted points, to smaller corner- or side-notched types better suited to hunting a diversity of species (Anderson et al. 1990; Bullen 1975; Coe 1964; Whatley 1984; 2002). These point styles are the sole material indications of the shift from Paleoindian to Early Archaic. This scenario presupposes an almost environmentally-driven transition between the Paleoindian and Archaic.

1.2.2 The Late Archaic to Early Woodland Transition

On the other end of the spectrum, the transition from the Archaic to the Woodland, approximately 7,000 years later, is somewhat less well-defined and decidedly less environmentally deterministic. Initially, Ritchie and the early proponents of the Archaic designation clearly intended to define the period as pre-ceramic and pre-horticultural. However, we now know that ceramic use took place during the Late Archaic, with Late Archaic occupations often identified solely by the presence of fiber-tempered wares (e.g., the Stallings Island sequence; see Stoltman 1972).

In general, the transition from the Late Archaic to the Early Woodland subperiod is assumed to have been brought about by a gradual increase in population density and sedentism, and is marked by the acquisition of a number of distinctive material and cultural traits. The Early Woodland appears to be more highly correlated with increasing intra- and extra-regional trade (exemplified by the presence of more exotic items), developing social hierarchies, technological innovations in ceramics, and a presumed increase in political superstructures, although many of these cultural changes clearly began during the Late Archaic.

Dwellings become more permanent, are situated in denser concentrations, and are extended as part of more continuous settlements. Technological advances in pottery manufacture became widespread after the Archaic, resulting in increased levels of efficiency and productivity in food processing and storage (Dragoo 1975:17; Griffin 1967:180; Steinen 1995; Stoltman 1978:715). Thus, the transition out of the Archaic appears to involve much more complex cultural traits, and even focuses on social interaction as a prime mover.

1.3 DEFINITIONAL RESEARCH CONSIDERATIONS

By definition then, the Archaic Period covers a long span of time and a wide diversity of adaptations. It could easily be argued that people living in Georgia during the Early Archaic had more in common with the preceding Paleoindian Period than they would have with Late Archaic people (hence the title of Anderson and Sassaman's volume in 1996). Does this suggest that the Archaic designation is purely a catch-all term for hunting-gathering groups who lack some clearly definable complex cultural traits that are evident in the archaeological record (cf., Sassaman 2004)? Do archaeologists tend to gloss over their interpretations of Archaic behavioral patterns in favor of addressing temporal questions based on material culture traits? Clearly, the Archaic Period is the temporal frame within which most southeastern archaeologists feel that environment started to take a back seat to social issues. How, then, does the manner in which we address the significance of Archaic resources fit within our understanding of these developmental issues?

2.0 THE ARCHAIC ENVIRONMENT

2.1 REGIONAL PHYSIOGRAPHY AND GEOLOGY

Archaic Period sites are found across all of Georgia's physiographic regions and are located in a variety of environmental zones and habitats. Five major physiograpic provinces lie within Georgia's political boundaries: Cumberland Plateau, Ridge and Valley, Blue Ridge, Piedmont, and Coastal Plain (Figure 2.1). The Cumberland Plateau is a deeply dissected, sandstone-capped plateau present only in the extreme northwest corner of Georgia. To the south lies the Ridge and Valley, a belt within the Appalachian Mountains composed of long, even ridges running parallel to continuous valleys in a northeast-to-southwest direction. The Piedmont is a plateau region that stretches from New Jersey to central Alabama and within Georgia is bordered to the north by the Ridge and Valley, to the northeast by the Blue Ridge, and to the south by the Coastal Plain.

The Cartersville Fault line forms the boundary between the Piedmont and the Ridge and Valley provinces; the boundary with the Blue Ridge province has been more difficult to ascertain, and some geologists argue for it to be extended as far south as the Brevard Fault zone. At its transition with the Coastal Plain, the older and harder crystalline rocks of the Piedmont protrude over the younger, unconsolidated, and more readily eroded, sediments of the Coastal Plain, creating an erosional scarp known as the Fall Line. As the name suggests, streams flowing across the Fall Line undergo abrupt changes in gradient marked by the presence of falls, rapids, and shoals. The Coastal Plain is made up of sediments that were washed down over millions of years from the Blue Ridge and Piedmont physiographic regions.

Each of Georgia's physiographic regions contains a variety of lithic resources that were exploited by prehistoric groups for tool production. The lithology of the Ridge and Valley region includes carbonates and shales, with the carbonates acting as the principal chert bearing geologic features (Goad 1979). Four primary geologic formations, relating to different periods within the Paleozoic, contain chert bearing deposits. Chert material found within the Ridge and Valley that was primarily used by prehistoric populations includes Fort Payne chert and cherts contained within the Knox group.

The Knox chert group is comprised of three formations within Georgia: Copper Ridge Dolomite, Chepultepec Dolomite, and Longview Limestone (Table 2.1). Of these three sources, material from the Copper Ridge formation was the only one widely used by prehistoric groups. Knox chert commonly presents a black or black gray coloration with occasional white to gray banding. The material is generally hard and maintains a jagged surface (Cressler 1970). Thermal alteration yields a darkened color and produces a high surface gloss (Goad 1979).

Fort Payne chert ranges in color from black to blue gray, bluish white, and white, with blue gray most typical of the material (see Table 2.1). Texture is commonly smooth and fine grained. The material maintains a soft high luster and contains numerous fossils, typically crinoids. Characteristics of thermal alteration include a color shift from the common blue gray to a dark gray or, with intense, heat a translucent light red. Fort Payne chert is a highly workable raw material that is also abundant and thus the "most extensively aboriginally utilized chert of the Ridge and Valley" (Goad 1979:18).

Other minor cherts occurring in the Ridge and Valley include Armuchee and Bangor (see Table 2.1). Armuchee chert is a black to dark gray, fossiliferous material that is often found interbedded with quartzite. Freshly exposed surfaces of Armuchee chert display a red-brown surface. Bangor chert is found in geologic formations dating to the Upper Mississippian era as nodules typically in blue gray limestone. Bangor chert is very similar to Fort Payne chert in both color and texture which often impedes identification (Goad 1979).

The geological structure of the Piedmont is quite complex and contains rock formations of many different materials and ages, all remnants of ancient mountain chains that have since eroded away. The

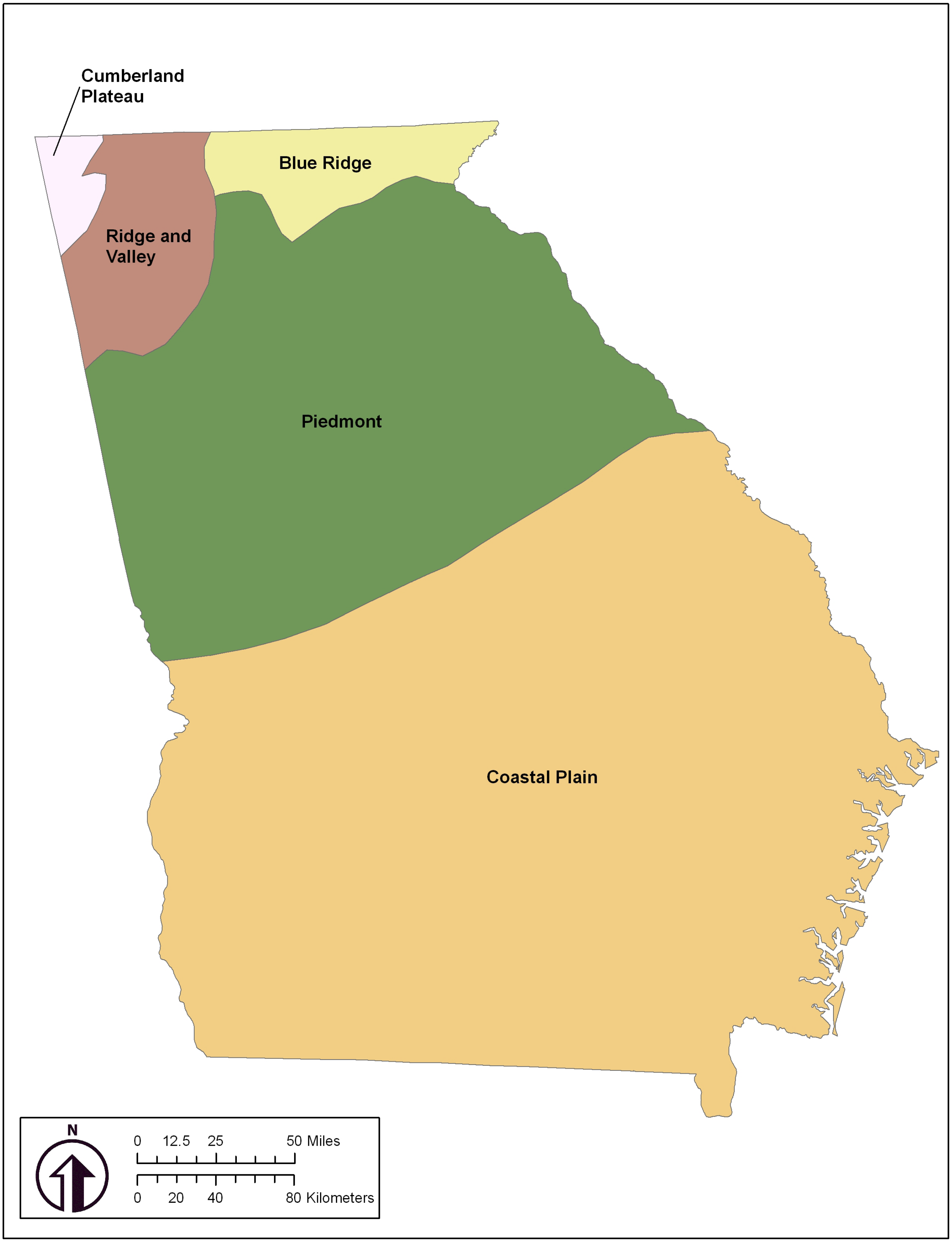


Figure 2.1 Physiographic map of Georgia.

Table 2.1 Georgia chert types (adapted from Goad 1979).

Chert Type	Color	Inclusions	Luster	Texture	Thermal Alteration	Flaking Properties	Prehistoric Usage
Ridge and Valley							
Conasauga	Dark Grey Black, Tan	Present	Dull	Brittle	Dark Black with Mottled Luster	Highly Workable	Limited
Newala	Black, Gray, White Purple, White, or Smoky Bands Drab or Olive Green		Dull	Hard/Vitreous	Becomes Lustrous Pink and Purple Banding Become Red or Orange	Workable	Limited
Armuchee	Black, Medium to Dark Gray	Fossiliferous	Dull			Workable	Limited
Fort Payne	Blue to Blue Gray Bluish White to White	Fossiliferous	Soft, High Luster	Smooth, Fine Grained	Dark Gray, Intense Heat Produces Clear Light Red	Highly Workable	Widespread
Bangor	Black to Blue Gray	Fossiliferous	Soft, High Luster	Smooth, Fine Grained		Workable	Limited
Knox Group							
Copper Ridge	Light to Dark Gray, Black		Dull	Hard/Vitreous	Darkened Surface Color, High Surface Gloss	Workable	Widespread
Chepultepec	Yellow, White	Fossiliferous, Rhombic Cavities	Dull	"Worm Eaten" Hard		Very Poor	Limited
Longview	Reddish, White, Gray		Soft	Hard/Brittle	Bright Orange to Dark Red High, Smooth Gloss	Workable	Limited
Coastal Plain and Piedmont							
Clayton Formation	White,Yellow to Brown Heavily Patinated		Glossy	Brittle		Workable	Widespread
Claiborne	Red, Yellow, to Cream Mottling and Banding	Calerous Material	Dull	Compact/ Brittle	Bright Pink and Orange, Dark Red, Glossy	Workable	Widespread
Jackson	Black, Tan, Red Yellow Cream to White	Calerous Material	Dull	Grainy	Bright Pink and Orange, Dark Red, Glossy	Workable	Widespread

Table 2.1 Georgia chert types (continued).

Chert Type	Color	Inclusions	Luster	Texture	Thermal Alteration	Flaking Properties	Prehistoric Usage
Suwannee Limestone Group							
Flint River	Translucent, red, Yellow, to Brown Brown or Tan Banding	Few Fossils	Dull	Porous	Dark Red or Deep Brown, Glossy	Workable	Unknown
Savannah River	Dark Gray, Black, Clear, Cream, Brown, White	Fossiliferous	Dull	Dense, Brittle	Yellow to Dark Red, Darker on outer surfaces then inner core	Workable	Unknown

Piedmont is composed of crystalline igneous rocks (formed by the cooling and crystallization of molten magma) and metamorphic rocks (caused by extremely high temperatures and pressures deep below the earth's surface) overlain by a deep red clay soil mantle. Fluvial processes have dissected and degraded much of the surface geology of the Piedmont, creating a 'rolling' landscape. It is believed that the modern-era biota of the Piedmont had been in place since the beginning of the Holocene (Watts 1970, 1975, 1980), and researchers often find that Archaic sites map onto present-day resource zones.

The Piedmont and Blue Ridge provinces are rich in readily exploitable mineral resources, accessible as outcrops on land and as exposed rocks in river basins. Outcrops of granite, such as Stone Mountain, were regularly quarried by Native Americans. Quartz was the most frequently used raw material for prehistoric tool manufacture in the Piedmont (Jones 2006; Table 2.2). Other types of lithic raw material found in the Piedmont include chalcedony, a quartz that forms as "radiating fibers in bundles" (Luedtke 1992:23) as opposed to traditional grains, and therefore has a structure that is more porous than chert. Chert outcrops also occur in the Piedmont, and while similar to Coastal Plain chert, tends to be devoid of fossil inclusions (Jones 2006) and has an overall greenish to olive green hue. Metavolcanic rocks, having an almost chert-like appearance and ranging in color from a dull gray to silvery gray to black, are also found in the Piedmont, and have been provenanced to the Carolina Slate Belt, which extends into the eastern portion of Georgia from South Carolina just above the Fall Line (Whitney et al. 1978).

Soapstone or steatite, amphibolite (more commonly known as greenstone), and sandstone were other Piedmont mineral resources used by prehistoric populations. Soapstone, a very soft, ultramafic material, was often shaped into a variety of artifact forms, including cooking vessels, cooking stones, and pipes. It ranges in coloration from a light gray to a dark green, and is found throughout eastern Georgia in small, often discontinuous, outcrops along the Fall Line (Elliott 1981).

The Coastal Plain in Georgia contains sporadic chert deposits widely distributed throughout the region (see Table 2.1). Sizeable outcropping occurrences are located in southwestern Georgia, west of the Flint River, along the Fall Line, and on the southeastern Georgia coast along the Savannah River, below Augusta. In addition, residual nodules and boulders can be found along streams and ridges (Goad 1979). Coastal Plain chert is described as a Tertiary-age marine chert that ranges in coloration from a translucent caramel to an opaque, mottled white to buff material (Jones 2006). In many instances, this chert type was subjected to thermal alteration.

The Clayton Formation, a Paleocene chert-bearing geologic formation, is located in west-central Georgia and occurs in a northeasterly orientated band (see Table 2.1). Chert from this source is small and occurs as yellow nodules found in residual sands. It is described as yellow to brown in color, brittle in texture, and maintains a glossy luster. White and heavily patinated white chert is common to the formation near the Flint River Goad 1979).

Table 2.2 Quartz raw material types (adapted from Jones 2006).

Crystalline	Clear, glass-like, flake scars observable in detail. In large form, material varies in color, while in flake form material is clear to slightly cloudy. Sometimes the material presents streaks of white "cloudy" coloration mixed within crystal quartz.
Translucent	Smooth, nearly opaque to translucent, glass-like. Better grades have a "greasy" feeling; still maintain high degree of flake detail.
Milky	Fracture surfaces are bumpy to slightly grainy. Flake scars are discernible to varying degree, with retouch often present.
Smoky	Homogenous light to medium gray color, "greasy" texture. Translucence varies with raw material.
Granular	Flake scars almost indistinct, prone to forming angular fragments

The Claiborne and Jackson are two geological stages occurring during the Eocene Epoch that produce chert (see Table 2.1). The Claiborne stage is comprised of the Lisbon formation in the west and the McBean formation in portions of central and eastern Georgia. It contains large nodules or blocks containing compact, brittle, fossiliferous inclusions, and maintains a dull luster. Coloration ranges from red to cream to blue and sometimes is banded or mottled. Thermal alteration produces bright pink and orange to dark red coloration and yields a glossy luster. Sometimes the material is spotted as fossil inclusions within the material take on a chalky white appearance when heated (Goad 1979). Jackson stage cherts are located embedded in limestone or as residual nodules along creek and streambeds (see Table 2.1). Coloration is black or tan to a red, yellow, and white range, with a dull grainy luster. Thermal alteration reveals similar changes in coloration as Claiborne cherts.

The final major source for chert material is found in a narrow band running from the north central portion of the Coastal Plain to the southern border of Georgia relating to the Oligocene Epoch. Chert from this formation maintains marked differences that are primarily based on geographic location (Goad 1979). A white porous chert is common to all Oligocene formations and soils and often contains a high degree of fossilized mollusk inclusions. In southwestern Georgia along the Flint River, the chert is dense, vitreous, and brittle, displaying a color range including red, yellow, or brown (see Table 2.1). This chert maintains limited fossil inclusions and when thermally altered produces a glossy dark red or deep brown. Oligocene cherts along the Savannah River retain a variety of color including dark gray, black, clear, cream, brown, and white (see Table 2.1). These cherts are more fossiliferous than ones associated with the Flint River and are denoted by a smooth to grainy texture. When applied to Savannah River Oligocene cherts, heat treatment produces a glossy surface with a yellow to dark red color. Outer surfaces typically have darker coloration than inner surfaces (Goad 1979).

2.2 EARLY TO MIDDLE HOLOCENE ENVIRONMENTAL HISTORY

2.2.1 Rising Sea Levels

Several studies such as Colquhoun et al. (1980), Colquhoun and Brooks (1986), Brooks et al. (1989; 1990), and Howard and DePratter (1980) have enabled the reconstruction of sea level changes from the close of the Pleistocene to present day. While the regional effect of the correlated rising and falling of the water table definitely influenced the abundance and location of surface water and stream flow, the most critical effect was in the tidewater areas of the Georgia Coast. There, only minimal changes were sufficient to dramatically affect the estuarine environments.

At Little Salt Spring just south of Tampa on the Florida Gulf Coast, evidence was found that the water level in that cenote was about 11 to 12 m below the present surface at about 10,000 BP (Clausen et al. 1979:610). Pollen studies of the sediments in the spring also suggested that the surrounding landscape was dry (Clausen et al. 1979:611). The water level began to rise around 5200 BP. Brooks et al. (1989) have concluded that sea level and regional climatic change are interrelated. They believe that sea level served as a base-level control acting upon the freshwater hydrology of lowland, coastal areas. Data collected by researchers on the South Carolina coast indicate not just rising sea levels during the Holocene, but fluctuations on the order of 1-2 meters and on intervals of 400-600 years (Brooks et al. 1989:92; also see Brooks et al. 1979 and Colquhoun and Brooks 1986). Their fluctuation curves indicate sea level was about 9 meters lower than at present at about 10,000 BP, and presumably lower still at 12,000 BP. It rose rapidly after the close of the Pleistocene and by 4200 BP, or slightly earlier, was within 3 to 4 meters of its present level.

Howard and DePratter (1980) used archaeological sites on the Georgia Coast to more precisely define when sea level reached its current stasis. The evidence indicates that by 3000 BP sea level was about one meter lower than today and that sometime afterward it climbed to its current level. This is supported by archaeological work at several sites on the Georgia Coast where Late Archaic and Early Woodland subperiod sites were found to lie below current sea level (Kirkland 1979; Marrinan 1975, 1976; Waring 1968). Evidence from two sites reported by Kirkland (2003a, 2003b) suggests that sea level may not have reached its current position until as late as 1800 BP.

2.2.2 Reconstructing Environment

Reconstructing past environments depends on a wide variety of data sources. Today we have a broad range of data from many time periods and from many parts of the world from which to reconstruct and model paleoclimate. Much of the combined knowledge on paleoclimatic modeling is available online at the National Oceanic and Atmospheric Administration (NOAA), National Climatic Data Center (NCDC), and Paleoclimatology and Climatic Reconstructions website (http://www.ncdc.noaa.gov/paleo/paleo.html). This is also enhanced by information gathered at the National Aviation and Space Administration (NASA), Goddard Space Flight Center, Global Change Master Directory, under the paleoclimate link (http://gcmd.nasa.gov/index.html).

Sources such as these serve as directories to the wide variety of paleoclimatic data and interpretations available on the internet. Historical records and dendrochronological studies tend not to extend far enough back to provide insight into Archaic Period climate. Additionally, available ice core, coral reef, and boreal lake data sources tend to be too distant from Georgia to be of use. Speleothem, borehole, and plant macrofossil data is of somewhat greater utility, but their age range is generally far beyond the Archaic Period. For example, there are only five borehole records currently providing data on temperature fluctuations in the southeastern United States, the nearest of which is located in eastern Alabama (NCDC 2007). Some plant macrofossils are known from Bob Black Pond in northeastern Georgia, but the date range for this data is closer to 20,000 BP (Watts 1970).

Data sources that have been useful in reconstructing paleoenvironment on the South Atlantic Slope include depositional records. Depositional records are essentially measures of the rate at which sediments in fluvial systems are deposited on alluvial landforms. Several large-scale cultural resources management projects in the region have produced geoarchaeological studies that together have contributed significantly to our understanding of Holocene landscape development (e.g., Anderson and Schuldenrein 1985; Foss et al. 1985; Segovia 1985; Schuldenrein and Anderson 1988).

Until fairly recently, our understanding of the late Pleistocene and early Holocene interface on the South Atlantic Slope was informed largely by geoarchaeological research at the Rucker's Bottom (9EB91) and Gregg Shoals (9EB259) sites. The latter contains a deeply stratified deposit that formed as a result of high rates of sedimentation occurring because of its location at the confluence of an alluvial fan and primary stream. Evidence of substantial alluvial deposition at these sites indicates episodes of landscape denudation and heavy rainfall (Segovia 1985). A combination of factors, including the melting of glaciers, sea level rise, increases in precipitation, and resulting hydrographic changes as more water coursed through river channels, were likely responsible for the major landscape changes noted during Pleistocene-Holocene transition. Understanding how landscape changed—and, specifically how the mobilization of great masses of Pleistocene sediment during the initial post-glacial era resulted in both the severe erosion and the deep burial of archaeological deposits dating to the Paleoindian and Early Archaic—is important to assessing the effectiveness of site identification techniques.

According to Schuldenrein (1996), the onset of the mid-Holocene (circa 8500 BP) was marked by a transition to lower-energy channel environments, with braided streams giving way to meandering rivers and stabilization of base levels. By 6000 BP, near-contemporary meander belts were established, and differentiated aquatic settings began to emerge in the Piedmont region. Comparing results from his detailed study of the Rucker's Bottom site in the upper Savannah River valley (Anderson and Schuldenrein 1985) to previous work conducted in the Haw River and Little Tennessee River valleys, Schuldenrein (1996) concludes that despite variability in stream dynamics and channel morphology between these study areas, mid-Holocene period floodplain development assumed a cyclic pattern of progressive sedimentation followed by intervals of stabilization.

At the Rucker's Bottom site, Early Archaic artifacts were found to occur in sediments that had a medium to course grain, suggesting vigorous channel activity during the early Holocene, while Middle Archaic artifacts were found in increasingly finer sediments, suggesting gentler stream flow by the mid-Holocene (Anderson and Schuldenrein 1985). Also, evidence of pedogenic structures, essentially incipient B-horizons marked by the appearance of stacked lamellae sequences, suggests the alluvial system became increasingly stable over time, leading Schuldenrein (1996) to argue that during the mid-Holocene, short episodes of moist climate may have interrupted a largely dry climatic environment. Over the course of the mid-Holocene, sedimentation slowed and, by the Late Archaic subperiod, began to resemble modern depositional rates.

Based on this and other research, Schuldenrein (1996) describes the mid-Holocene as a 5,000 year adjustment period, during which post-glacial environments stabilized, stream channels reverted to their earlier floodplain zones, sedimentation rates diminish, and critical resource zones and modern biota emerged. As a consequence of this argument, food collection activities at archaeological sites dating to the Middle Archaic and Late Archaic subperiods have often been interpreted based on their mapping with contemporary resource and subsistence zones.

As Sassaman and Anderson (1994:7) have argued, however, data from geoarchaeological studies must be used with caution. While depositional data may be used to draw inferences about climatic and environmental changes, it is often difficult to distinguish between high rates of sedimentation that occurred with accelerated erosion following loss of ground vegetation in a dry climate from that attributable to a wet climate and, therefore, more frequent flooding. In fact, more current research indicates mid-Holocene environment may not have been as stable or consistent as previously suggested, and that some hydrographic adjustments may have occurred much earlier. Studies by Leigh (2004, 2008; also see Leigh et al. 2006) indicate that the transition from braided to meandering was largely complete by around 15,000-16,000 BP, and recent climatological investigations present evidence of rapid and cyclical climate change events during the mid-Holocene (e.g., Bond et al. 1997; Kidder 2006; Mayewski et al. 2004; Overpeck and Webb 2000).

Using both palynological and sedimentologic data from North Carolina, Leigh and his colleagues have also argued that conditions in the Southeast during the early- and mid-Holocene were actually wetter than they are today (Goman and Leigh 2004; Leigh and Webb 2006; cf., Cronin et al. 2005 and Otovs 2005). Evidence supporting increased rainfall in north Georgia is provided by Sheen (2001). Higher frequencies of heavier rainfall and flooding possibly resulted from tropical storms or severe thunderstorms and may be attributable to changes in atmospheric circulation related to shifts in the position of the Bermuda High (Goman and

Leigh 2004; Leigh and Webb 2006). Based on the results of their study, Lui and Fearn (2000) have argued the position of the Bermuda High during the mid-Holocene thermal maximum (ca. 6000 BP) was further north than present. A more northerly Bermuda High would have focused more tropical storms, including hurricanes, and moist air, directly over the South Atlantic Slope and the Appalachian Highlands. A greater supply of moist air would have promoted the occurrence of summer thunderstorms to produce heavy rain. This would have continued until the Bermuda High shifted south (circa 3000 BP), causing hurricanes to again become productive over the Gulf Coast.

Palynological data provides additional insight into changing vegetational patterns. In a study by Sheehan et al. (1985) for the Richard B. Russell Multiple Use Area on the upper Savannah River Valley, palynological evidence suggests that spruce, pine, fir, and hemlock rapidly decreased in importance between 9000 and 4000 BP. Early studies by Watts (Watts 1970; also see Watts et al. 1996) suggest that vegetational changes during the mid-Holocene were more dramatic in the Coastal Plain than in the Piedmont; while oaks continued to dominate the Piedmont forest vegetation, there is evidence for a contemporary replacement of oak by pine and the development of swamps and lakes in the Coastal Plain (Watts et al. 1996). These studies have led some archaeologists to conclude that the Piedmont was a comparatively more stable environment for human foraging than the Coastal Plain (e.g., Claggett and Cable 1982). Moreover, little change in vegetative cover and the persistence of oak-hickory-southern pine forests are interpreted to imply the presence of homogenous, if not always spatially predictable (e.g., Blanton and Sassaman 1989), mid-Holocene Piedmont habitats. Such environmental characterizations stand in contrast to those of the Coastal Plain, described as patchy and increasingly diversified, and where resource availability becomes predictable only as sea level rise stabilizes towards the end of the mid-Holocene.

This more traditional description of mid-Holocene resource structure on the South Atlantic Slope, however, is based mainly on pollen data from lake basins. The data reveals regional upland pollen records but masking subtle changes in available floodplain moisture that may have been brought on by occasional thunderstorms (Goman and Leigh 2004). Moreover, we do not have enough fine-grained palynological data from the Piedmont to directly examine the possible vegetational changes that may have accompanied wet intervals or prolonged periods of increased precipitation.

Leduc's (2003) *Pollen Viewer*, an online database documenting changing biomes from 21,000 years ago to the present in 1,000-year increments (summarized in Williams et al. 2004, 2006), may help clarify paleoclimatic and environmental reconstructions for the Georgia Piedmont. Additional information from the BIOME 6000 project (University of Bristol 2005; also see Prentice et al. 2000) provides snapshots of mid-Holocene climatic patterns across the world (at 0, 6000, and 18,000 BP). Together, these models indicate a fairly steady distribution and composition of vegetation communities in the Piedmont and Southern Appalachians during the last glacial period (21,000 to 17,000 BP), with cold-tolerant species such as spruces (*Picea* spp.) and pines (*Pinus* spp.) predominating. Between 16,000 and 8000 BP, many of these species shifted northward and westward, opening the way for oak-hickory (*Quercus* spp. and *Carya* spp.) woodland to become the climax forest in the Southeast, and suggesting a rapid warming of the regional environment. These data corroborate research by Delcourt and Delcourt (1987) arguing for the establishment of an oak forest with herb understory on the South Atlantic Slope by the beginning of the Holocene period.

A preliminary analysis of comparative data provided through Leduc's Pollen Viewer, however, suggests vegetational community change to have been more drastic for the Piedmont than the Coastal Plain between 10,000 and 6000 BP, and again from 6000 BP to today (Figure 2.2). Note that the relative abundances do not reflect the entirety of the pollen samples, but specific species which represent the past and modern communities; thus they are to be compared within species only and not as a representation of the breadth of species identified.

Based on this data, the Coastal Plain vegetation appears to have been relatively stable, throughout, though the increase in Bald Cypress (*Taxodium distichum*) and Tupelo (*Nyssa* spp.) pollen does indicate

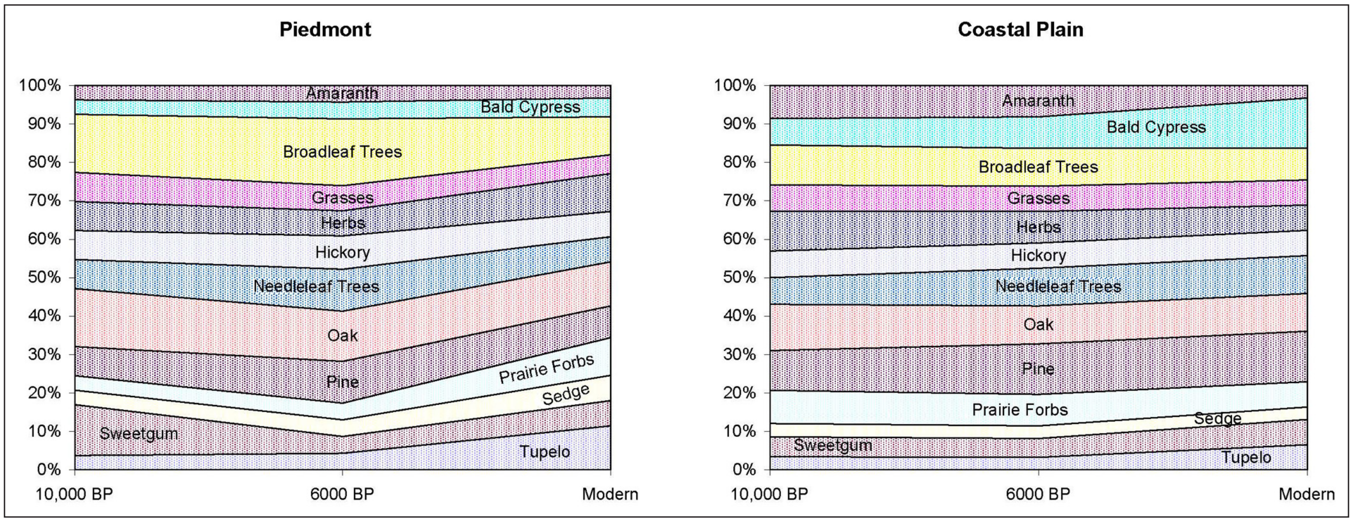


Figure 2.2 Relative abundance of selected species by period in the Piedmont and Coastal Plain physiographic provinces of Georgia (extracted from Leduc 2003).

increasing moisture, and/or the expansion of mature swamps and forested marsh habitats. The relative stability of sedges (*Cyperaceae*) though, tends to suggest that open-water marsh and wetland habitats in general did not increase. The apparent decline of slow growing hardwoods, such as Sweetgum (*Liquidambar* spp.), and the increase in pines and needleleaf trees in the Piedmont around 6000 BP, suggests some climatic instability. Mid-Holocene climatic instabilities may have created conditions for reduced predictability in the availability of wild plant and animal resource in the Piedmont as compared to the Coastal Plain. More pollen data is needed, however, particularly from floodplain zones, to understand the vegetational changes that ensued with increased moisture and flooding during the mid-Holocene climatic period (also see Goman and Leigh 2004).

Clearly a consensus view on mid-Holocene climate has not yet been achieved. Some of the more recent studies presented above suggest less predictability in Piedmont resource availability than previously assumed. Certainly as our knowledge of Holocene environmental changes continues to develop, we will we need to revisit some of our long-held notions of how human foraging patterns were organized to extract local resources. We may also need to recognize the extent to which mid-Holocene climatic instabilities created conditions for a reduced predictability in the availability of wild plant and animal resource in the Piedmont than in the Coastal Plain, and how Middle Archaic organized informational networks and foraging strategies to adapt to these conditions.

3.0 THE ARCHAIC ARCHAEOLOGICAL RECORD IN GEORGIA

3.1 TEMPORAL MARKERS AND THE DISTRIBUTION OF ARCHAIC COMPONENTS IN GEORGIA

Archaic components in Georgia are often recognized by the presence of diagnostic material culture, including projectile points and fiber-tempered ceramics. In fact, the use of such relative dating methods far exceeds absolute dating (e.g., radiocarbon) in the identification of Archaic sites. At a few key excavations, however, archaeologists have recovered samples for radiocarbon dating. The most notable of these sites are: Theriault (Brockington 1971) and several other sites along Brier Creek (Elliott and O'Steen 1987); Taylor Hill (Elliott and Doyon 1981) and Rae's Creek (Crook 1990), both near Augusta; Rucker's Bottom (Anderson and Schuldenrein 1985) and Gregg Shoals (Tippitt and Marquardt 1984), now submerged by Russell Reservoir; the Wallace Reservoir area of the Oconee River Valley (O'Steen 1983, 1996); Kings Bay (Calvert et al. 1979) and the Cannon's Point Shell Ring (Marrinan 1975, 1976) along the coast; and Paris (Wood et al. 1986) and Stallings Island (Claflin 1931; Stoltman 1966) shell middens in the Savannah River.

3.1.1 Diagnostic Projectile Points

Based on the recent work by Whatley (2002) there are 41 recognized projectile point types found in Georgia that are commonly dated to the Archaic Period. Of these, 35 have fairly well-established date ranges (Figure 3.1). Date ranges for the other six point types remain speculative at this time, largely due to the absence of reliable radiocarbon dates; the ranges for these points have been determined based on their co-occurrence with more firmly dated examples.

In general, the Early Archaic subperiod is characterized by ovate, stemmed, and beveled quartz bifaces, corner and side notched projectile points, hafted end scrapers, and flaked stone adzes. In Georgia, the Taylor (Big Sandy), Palmer, Kirk corner notched, Kirk stemmed/ serrated, and LeCroy are among the most common projectile point forms identified. Early Archaic tool makers preferred chert, and many of the recognized point types are made on this high-quality material. Wear patterns observed on Early Archaic tools suggest they were used to kill, butcher, and skin animals, as well as shape wood (Stanyard n.d.). The distribution of Early Archaic projectile point types in Georgia is illustrated in Figure 3.2.

Three diagnostic projectile point types dominate the Middle Archaic subperiod (Coe 1964:35-43). These point types include Stanly (a triangular blade point with narrow, straight-sided stem), Morrow Mountain (an isosceles triangle blade with contracting stem), and Guilford (a lanceolate point with the widest point near the center) (see Figures 3.3 a, b, and c). During this subperiod, quartz begins to be the most widely used lithic raw material in the Piedmont and other areas of north Georgia, while chert continues to be preferred by inhabitants of the Coastal Plain, especially in the Flint River Valley, due to its local availability (Stanyard n.d.). Figure 3.4 shows the distribution of Middle Archaic projectile point types in Georgia.

Late Archaic diagnostic lithic artifacts include Savannah River Stemmed projectile points (a triangular blade with square shoulders and a vertical stem with straight or concave base; Coe 1964:44), grooved axes, net sinkers, steatite vessels, bone and antler tools, and a variety of shell ornaments (Coe 1964:113; Griffin 1967:180). A smaller variant of the Savannah River point, the Otarre (Keel 1976), is thought to be associated with the later portion of the Late Archaic subperiod. Other projectile point types associated with this subperiod include the Elora, Kiokee Creek, and Ledbetter, all of which exhibit the same general design features: triangular blades, straight or slightly contracting stems, and straight bases (Stanyard, n.d.). The most commonly reported Late Archaic point styles are shown in Figure 3.5.

To summarize, the trends illustrated in Figure 3.1 indicate a fairly complete series of diagnostics for

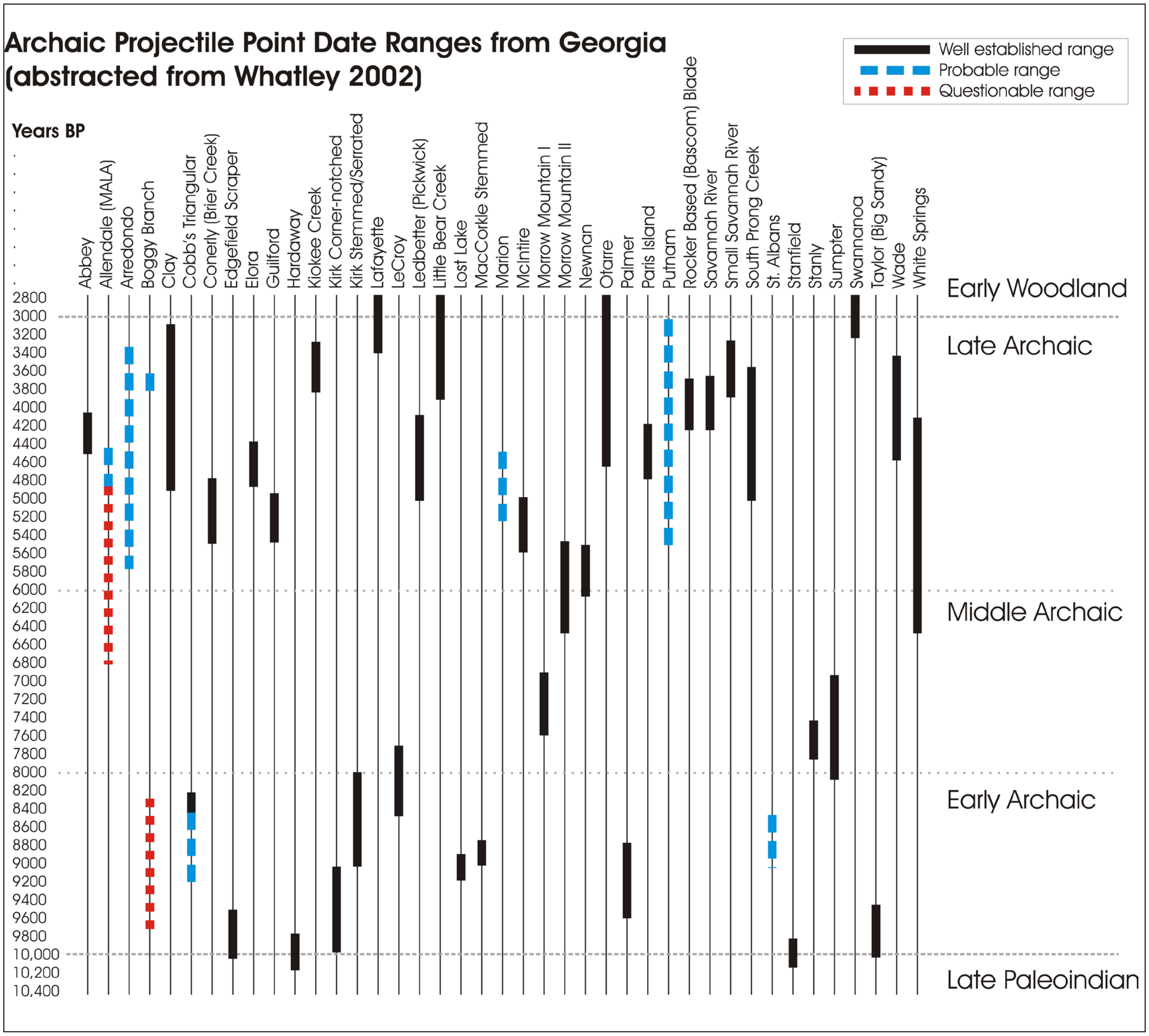


Figure 3.1 Diagnostic projectile point date ranges in Georgia (extracted from Whatley 2002).

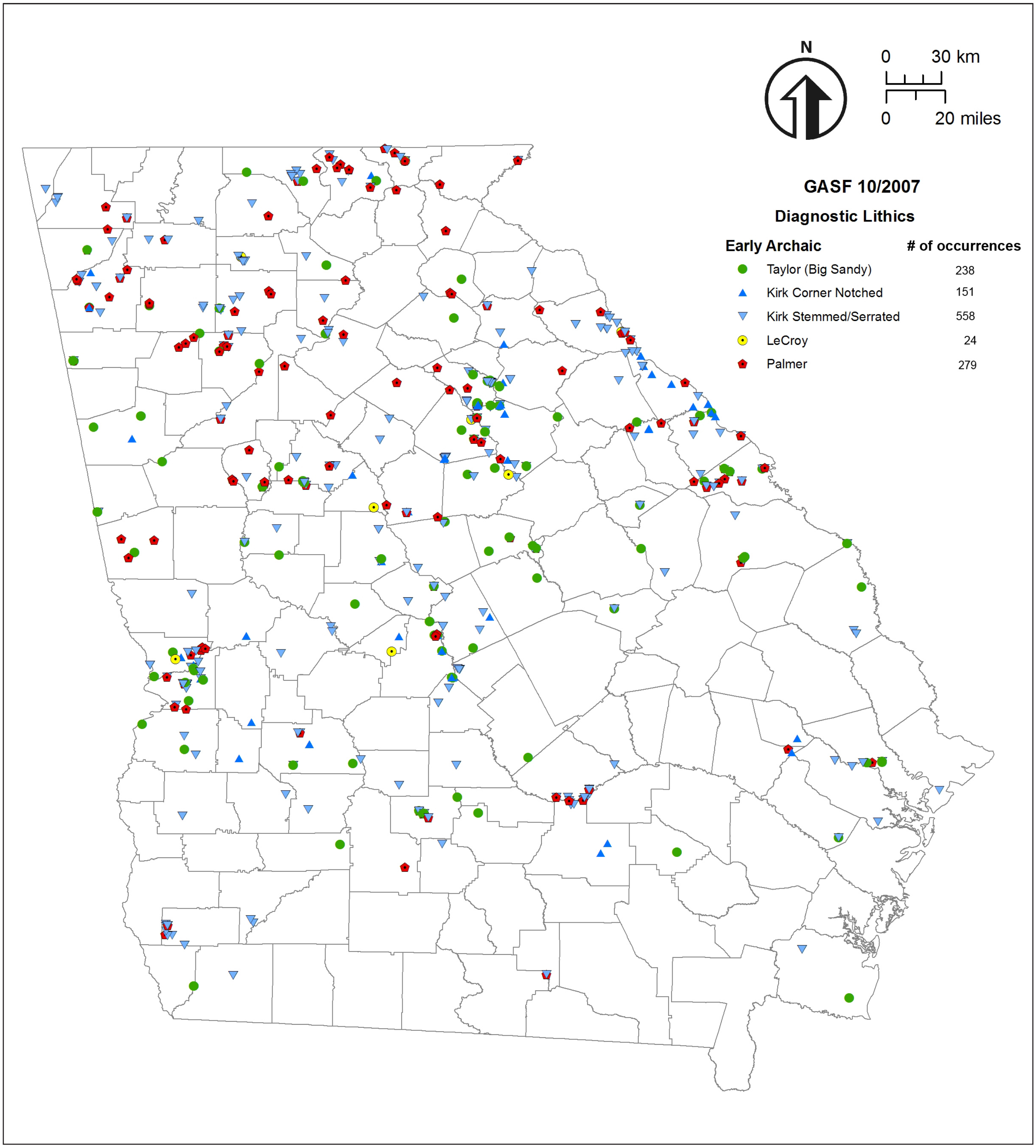


Figure 3.2 Distribution of common Early Archaic diagnostic projectile point types.

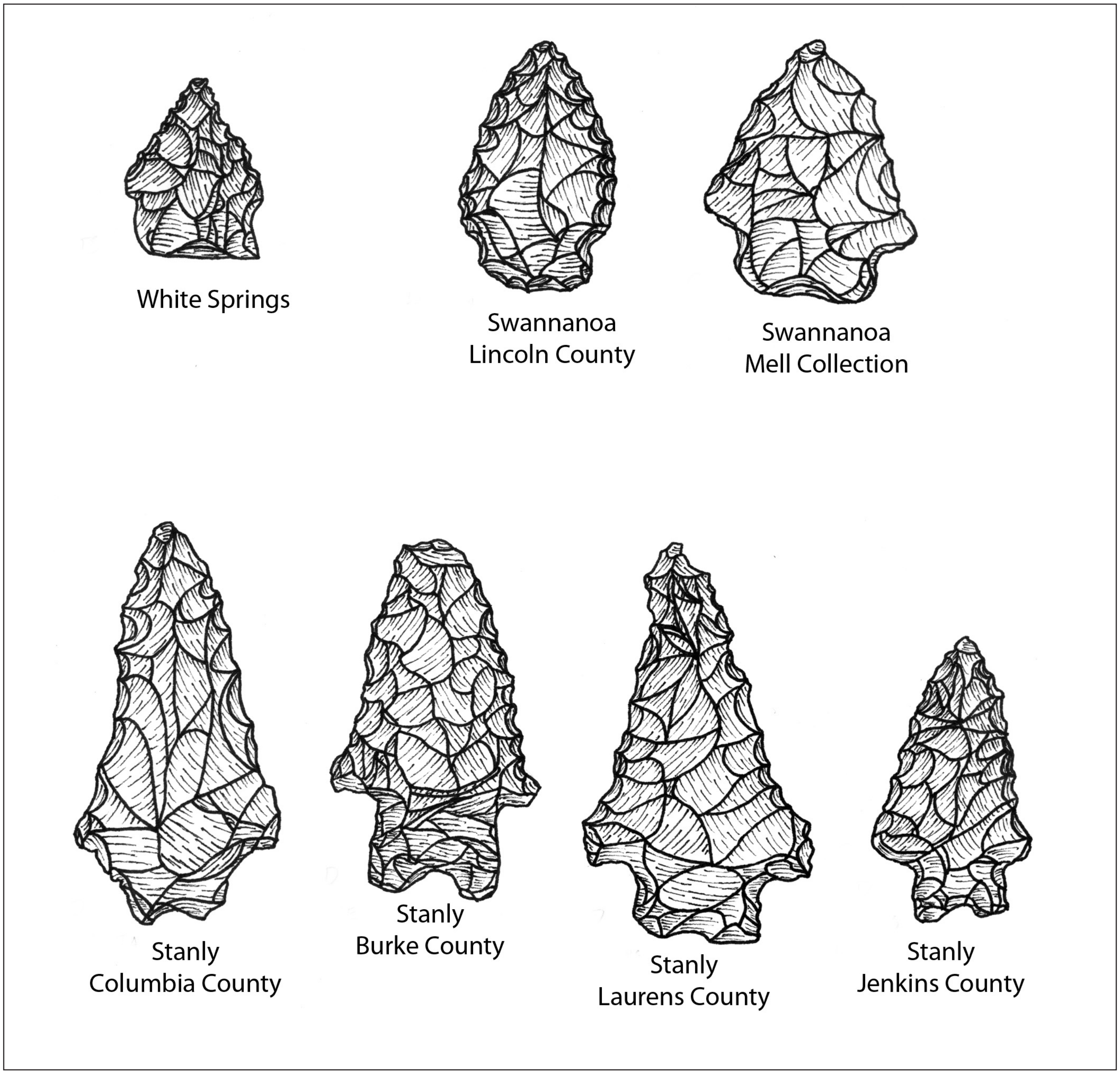


Figure 3.3 a Middle Archaic projectile points.

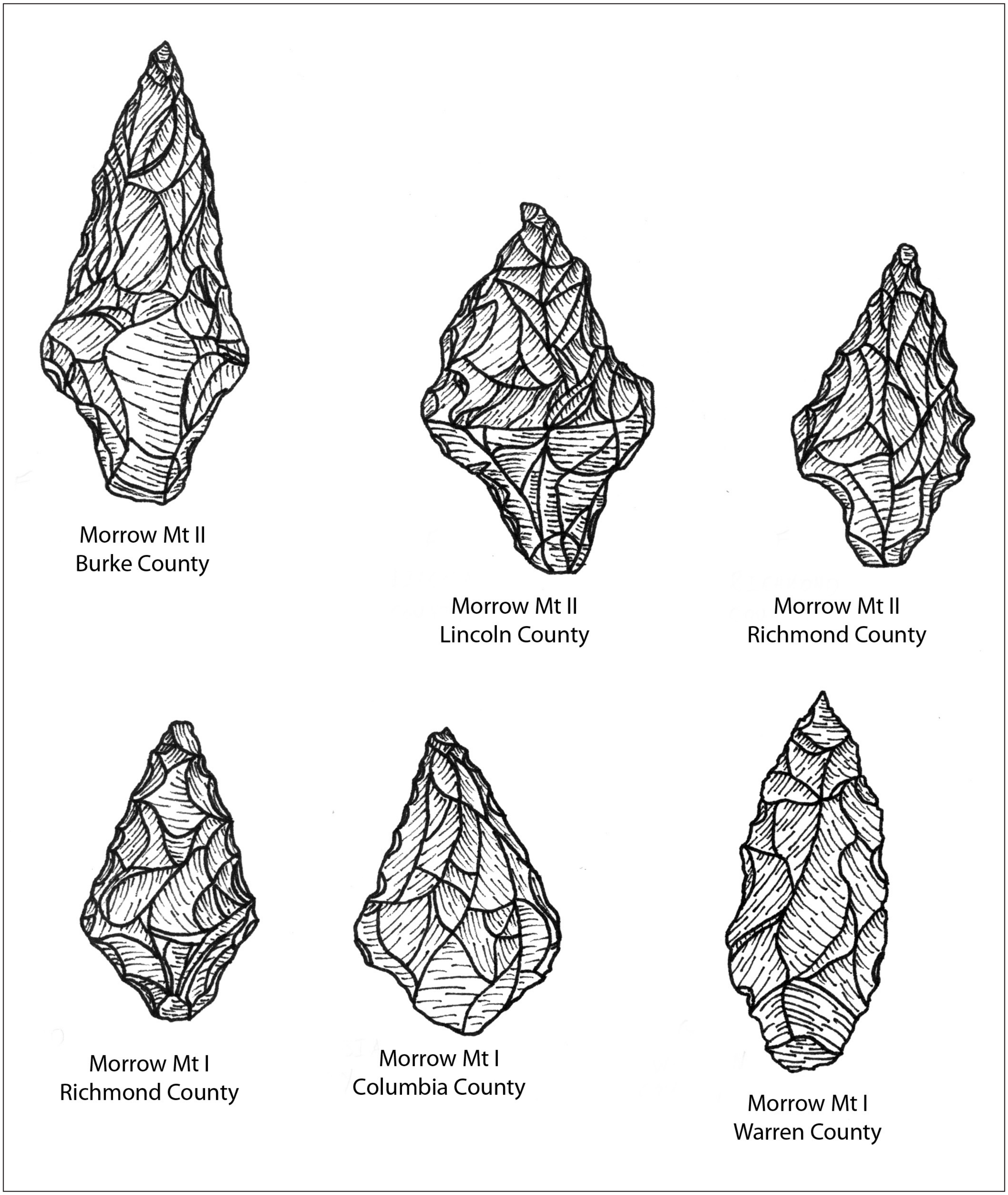


Figure 3.3 b Middle Archaic projectile points (continued).

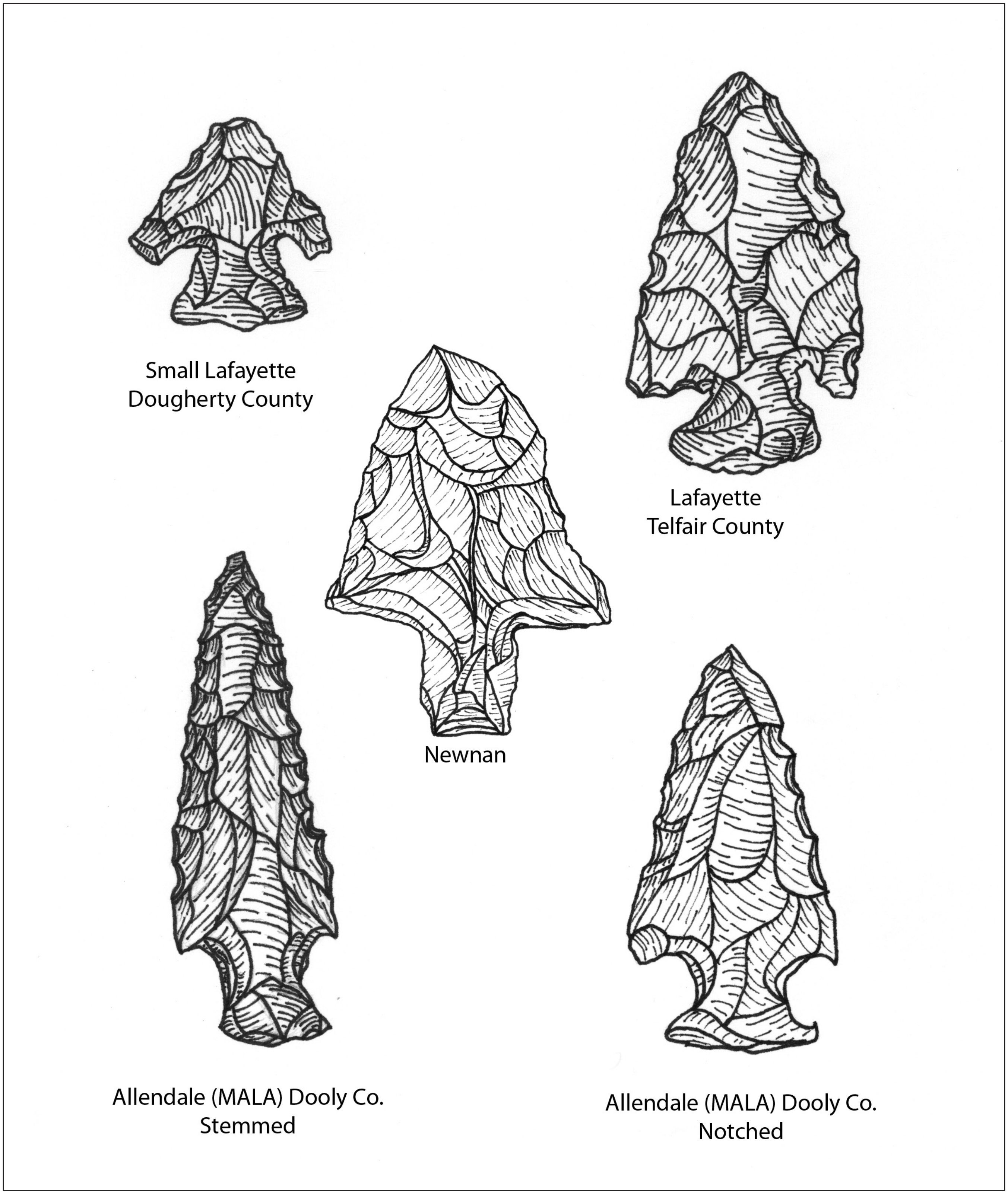


Figure 3.3 c Middle Archaic projectile points (continued).

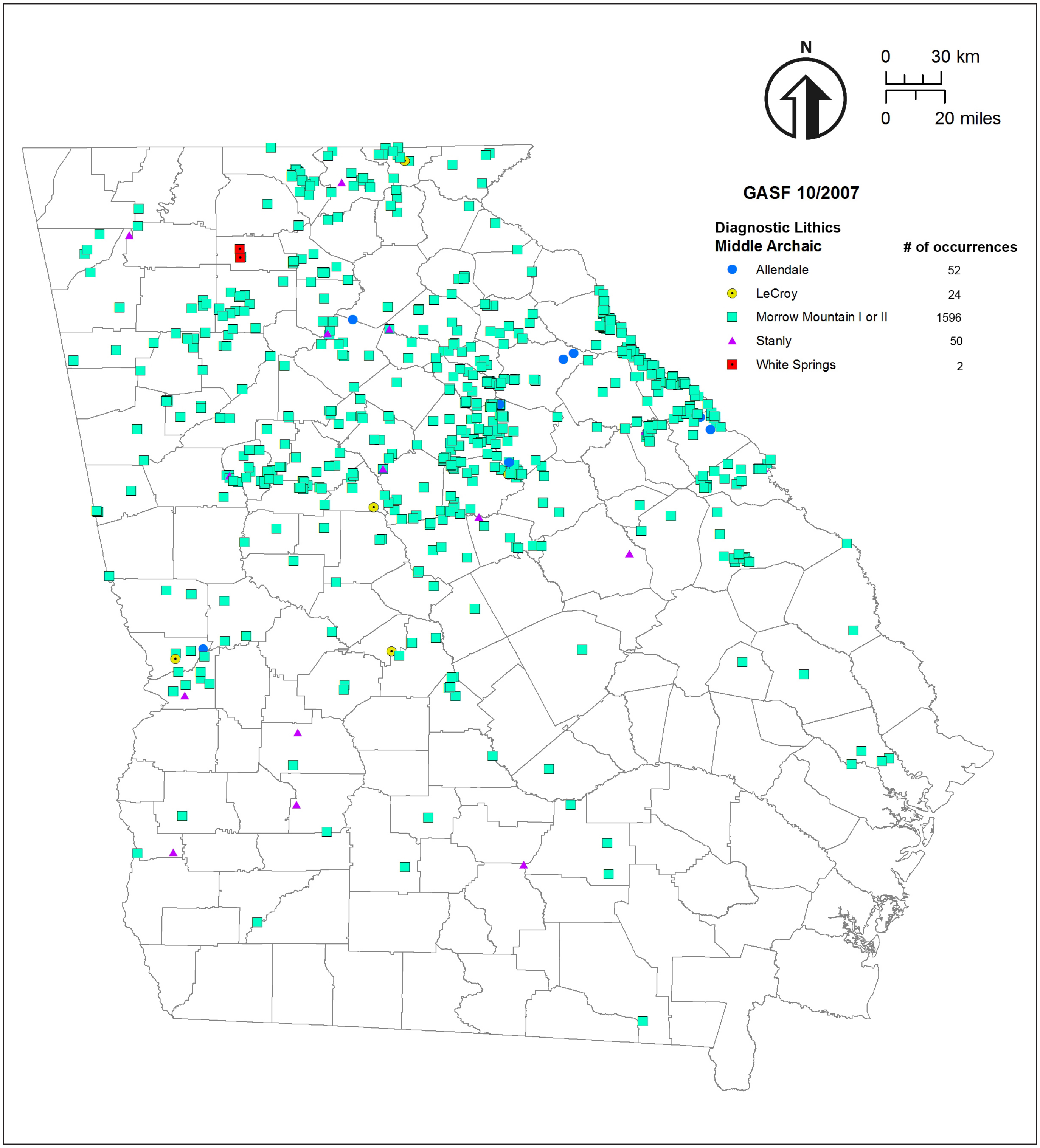


Figure 3.4 Distribution of common Middle Archaic diagnostic projectile point types.

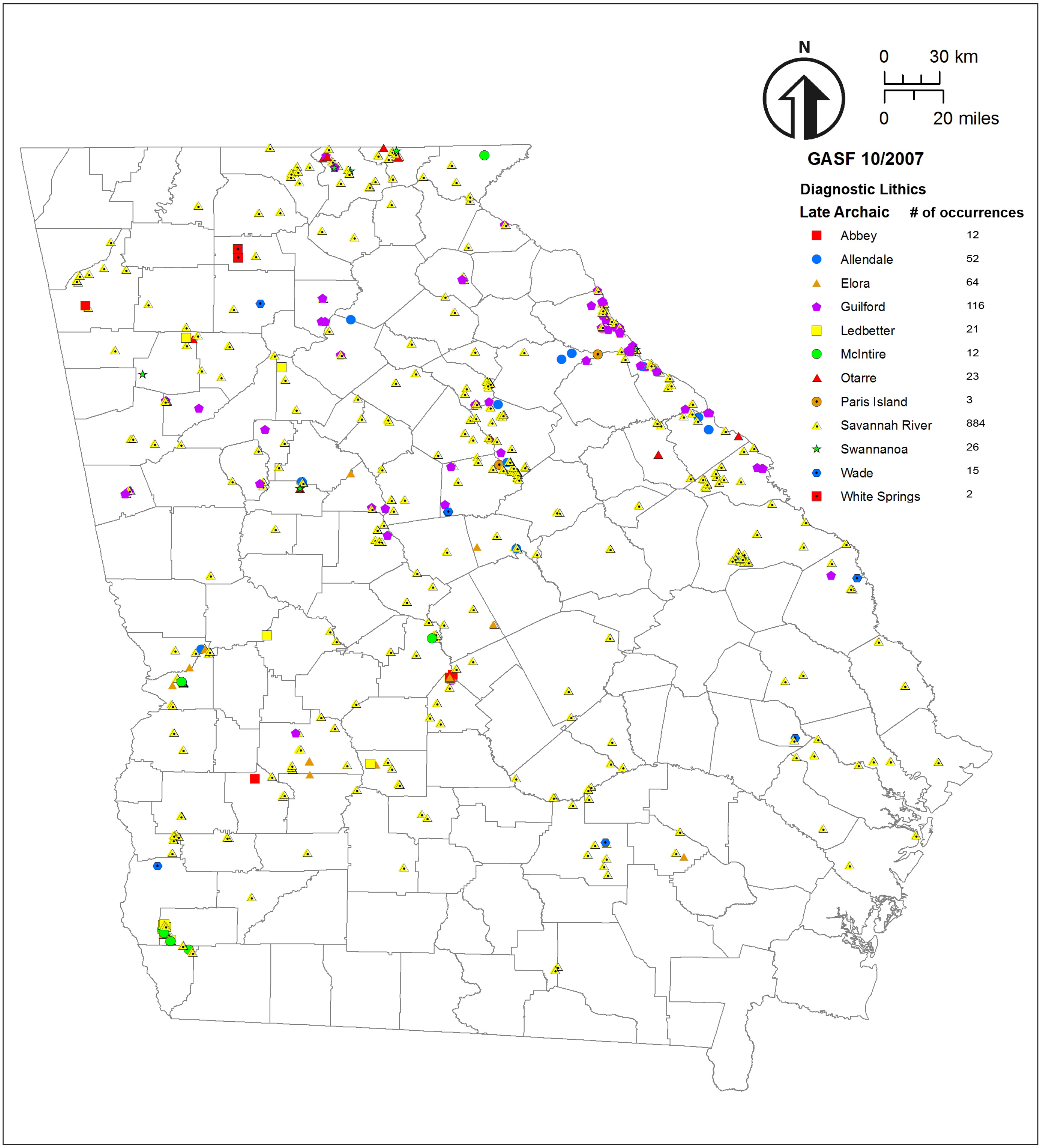


Figure 3.5 Distribution of common Late Archaic diagnostic point types.

both the Early and Late Archaic time frames. There is a much less well established Middle Archaic diagnostic assemblage. This can be seen as well in the distribution of sites; only 36 of the intensively excavated sites have Middle Archaic components compared with 60 with Early and 156 with Late Archaic components. It could be argued from these numbers that an effort should be made to find Middle Archaic sites that can be more intensively researched.

The distribution maps indicate that although there is a diversity of point styles recorded for each Archaic subperiod in Georgia, only the Early Archaic has a balanced distribution of types across the state. Four of the five major types (Taylor [Big Sandy], Kirk Corner-notched, Kirk Stemmed/Serrated, and Palmer) are fairly close in quantity and are nearly equally spread. The Middle Archaic is heavily dominated by Morrow Mountain occurrences, while the Late Archaic is dominated by Savannah River (and Guilford to some degree). Overall, Morrow Mountain and Savannah River points dominate the Archaic assemblages statewide. This suggests that these points either were the most commonly used through the length of the Middle and Late Archaic, or that perhaps they are the most easily identified and, therefore, reported. Clearly, this issue merits further analysis.

3.1.2 Diagnostic Ceramics

The second most common temporal marker used to denote the presence of an Archaic component is fiber-tempered pottery. Sassaman (1993) and Saunders and Hays (2004) provide thorough examinations of the distribution and nature of early ceramics in the Southeast. For Georgia, they recognize three early ceramic types.

The first appears in the lower Savannah River Valley around 4500 BP. Known as 'Stallings' after its discovery on Stallings Island in the Savannah River, this ceramic type is described as having a paste tempered with vegetable fibers, a smooth to rough exterior surface, rims that have rounded lips that usually, but not always, slant outward. A variety of surface decorations and treatments are found on Stallings pottery including plain, simple-stamped, punctated, and incised. Stallings is found on the Atlantic Coast from South Carolina south to St. Simons Island, Georgia, and up the Savannah River Valley well into the Georgia-South Carolina Piedmont (Williams and Thompson 1999:119-121). It occurs less frequently south of the Ocmulgee/Altamaha River drainage. Radiocarbon dates for the type range between about 4500 to 3000 BP (Calms 1968; Sassaman 1993:19; Stoltman 1966).

A second type, one that may be developmentally related to Stallings but defined for the Georgia Coast in the Glynn County area, is St. Simons. This type is named after the island from where it was first recovered and defined. Like Stallings, St. Simons is also fiber-tempered, with rims that are straight or slightly incurving and lips that are rounded or flattened and, sometimes, thickened. The vessel form is a simple bowl with bases that are either rounded or flattened. Surface treatments include plain, punctated, linear punctated (stab and drag), incised, incised and punctated, and herringbone stamped. The geographic distribution of St. Simons pottery is along the Atlantic Coast from Charleston, South Carolina, southward to the St. Johns River in northeast Florida. The type dates between 4200 to 3000 BP (Marrinan 1975:48; Sassaman 1993:19; Thomas et al 1979:20). Many researchers feel that St. Simons is so similar to Stallings that the two are virtually indistinguishable, and some have called for the abandonment of the St. Simons type name (Williams and Thompson 1999:117-118).

The Orange pottery series is defined for northeastern and peninsular Florida north of St. Augustine on the east coast and Tampa Bay on the west coast. It occurs in low frequency as far north as the mouth of the Satilla River on the Georgia Coast and is occasionally found in the Big Bend region of the Ocmulgee River in the interior. It too has a paste tempered with vegetable fibers. Vessel forms are shallow, flat-based, straight-sided bowls, sometimes rectangular in shape. The rims are usually straight with a rounded or slightly flattened lip.

Surface treatments and decorations include plain, straight-line incising to form concentric vertical diamonds or horizontal lines, incised spirals with background punctuations, and parallel and slanting straight incised lines. Later pottery sometimes is tempered also with sponge spicules giving it a chalky feel. Orange pottery dates between 4000 and 3000 BP (Bullen 1955, 1972; Milanich 1994:94; Sassaman 1993:20-21).

The distribution of fiber-tempered pottery types in Georgia is illustrated in Figure 3.6. The Orange Series has not been recorded in Georgia according to data in the GASF. We must assume that some of the "unspecified" fiber-tempered ceramics, particularly in Camden County and along the Florida border, may relate closely to Orange. As shown in Figure 7, the distribution of Stallings and St. Simons are not necessarily distinctive, but occurrences in the northern coastal area tends to be called "St. Simons" while those in other parts of the Coastal Plain are termed "Stallings." Thom's Creek ceramics are identified in Georgia solely in the counties adjacent to the Savannah River.

A cluster of occurrences in the Ocmulgee Big Bend and along the Satilla River are of an unspecified "fiber-tempered" type. Snow (1977) has suggested that the interior variants be defined as distinct Ocmulgee and Satilla sequences. This is just one example of the variability of fiber-tempered ceramics in Georgia. Such ceramic sequences have garnered much examination in the volumes by Sassaman (1993) and Saunders and Hays (2004). These studies have generally been developed within regional level studies, but cumulatively provide insight into patterns of ceramic technology, manufacture, exchange, use, and discard.

3.1.3 Soapstone as a Temporal Marker

Steatite, also called soapstone, is commonly found on Late Archaic sites and has been used sporadically as a temporal marker. In Georgia steatite is less well dated than in some of the surrounding states, but in general its use appears to be coeval with or just following the appearance of fiber-tempered ceramics, around 4000 to 3000 BP (Sassaman 1993:78). Steatite found in the form of perforated disks or slabs (variably identified as net sinkers or boiling stones) or as vessels, is often temporally associated with the Late Archaic and the beginning of the Early Woodland. Vessel fragments dominate steatite assemblages in the Coastal Plain and, less so, in the Piedmont (Elliott 1981:16).

Steatite quarry sites are infrequently found in Georgia, but there are several well known examples. The best known steatite quarry is the Soapstone Ridge complex of sites in DeKalb County (Dickens and Carnes 1983; Elliott 1986). However, studies of Oconee and Savannah River Valley steatite production and exchange are the most thorough in exploring the relationship between steatite and cultural complexity in Georgia (Elliott 1981; Elliott and Doyon 1981). These studies model procurement, production, organization, and exchange through statistical comparisons of steatite finds and the distances from their sources. Patterns of reciprocal exchange in steatite suggest a nascent development of complex social organization.

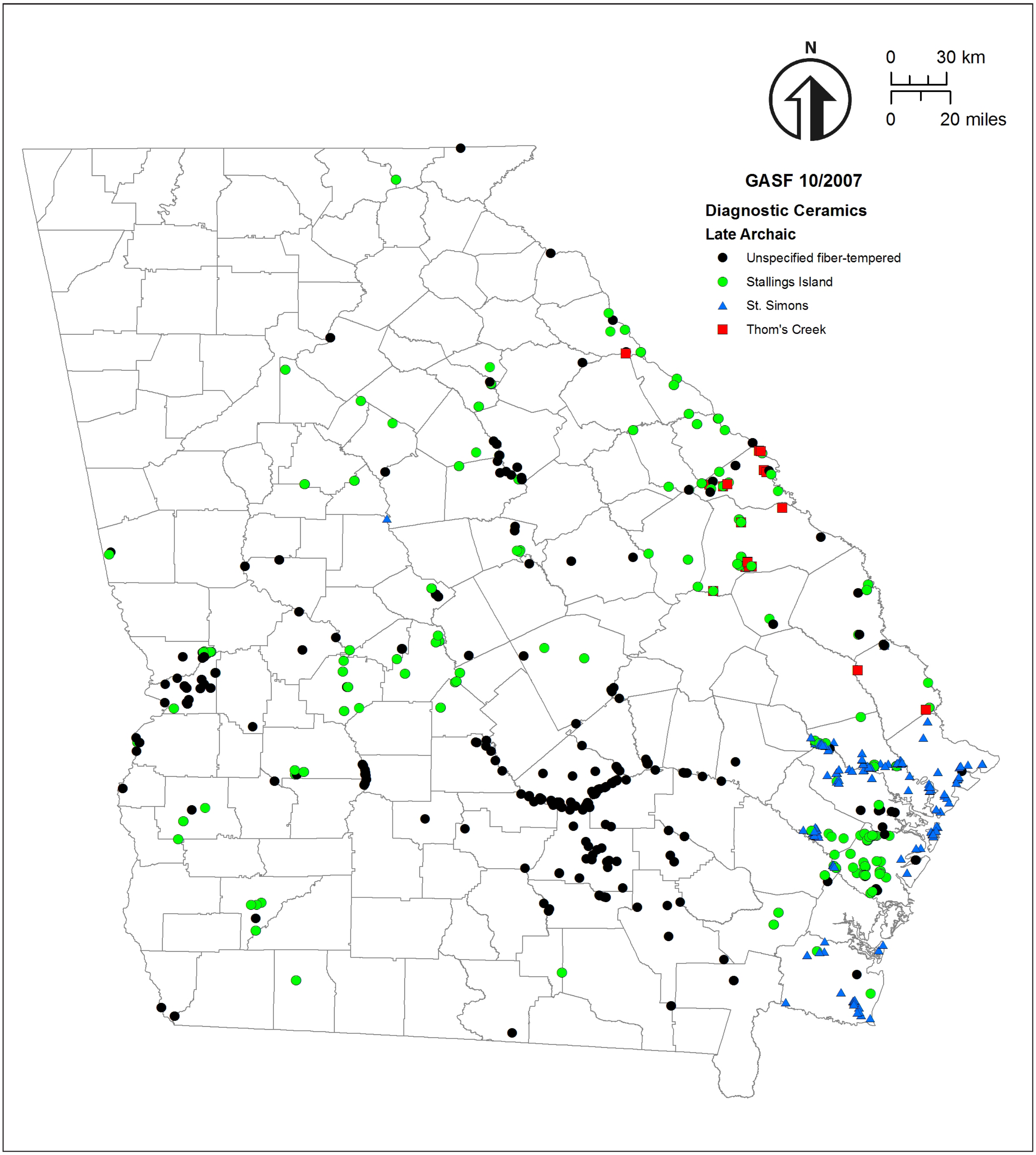


Figure 3.6 Distribution of recorded occurrences of Late Archaic fiber-tempered ceramics.

3.2 PATTERNS IN ARCHAIC SITE DISTRIBUTION

Of the 10,172-recorded Archaic components in Georgia, the Early Archaic is represented at 1,812 locales, the Middle Archaic at 2,604 locales, and the Late Archaic at 3,634 locales. Many sites that are recorded as "General Archaic," are probably assumed to be Archaic due to broadly shared characteristics of quartz lithic assemblages devoid of diagnostic projectile points. Figure 3.7 illustrates the distribution of all recorded Archaic sites in Georgia. Figure 3.8 shows the total distribution of recorded sites by Early, Middle, and Late Archaic subperiods respectively.

When we consider the distribution of sites by county (Figure 3.9), there is a tendency to see higher quantities of Archaic sites in several locations: the Piedmont in general, and specifically the Oconee River Valley; the North Metro Atlanta area; and the Middle Chattahoochee and Savannah River Valleys. This distribution, though, is skewed toward the counties within which most of the archaeological survey has occurred. The tendency is to see clusters in areas where large reservoir survey have created extensive datasets. The results would seem to suggest that Archaic sites are more numerous in the Piedmont than in the Coastal Plain. If this data is normalized as a percent of total sites recorded in the county however, a somewhat different picture emerges.

Figure 3.10 illustrates the percentage of Archaic components recorded for all archaeological sites identified in each county. This figure clearly indicates that the apparent trend of higher use of the Piedmont during the Archaic Period is not well supported. Instead, it appears that the Coastal Plain is just as well represented by Archaic components as the northern regions, especially along the lower Ocmulgee and Satilla Rivers. Interestingly, there are a lower percentage of Archaic sites in the Southeastern Georgia counties, and along the coast. This is perhaps due to the poor preservation of locales used by Archaic groups in what would have then been interior marsh areas or low sand ridges. It may also be due to a preference for coastal locales that are now submerged under the Atlantic Ocean. The Archaic cultural resource dataset from south-central Georgia certainly warrants further investigation.

If the distributional analysis is extended to districts within the larger physiographic regions, yet more trends emerge. Figure 3.11 illustrates the number of Archaic sites per square mile within physiographic subdivisions. This figure provisionally suggests Archaic occupation of the Washington Slope, Cherokee Upland, McCaysville Basin, and Hightower and Jasper Ridges was comparatively high.

When the data are normalized as a percentage of the total number of sites identified per square mile (Figure 3.12), we find that areas above and below the Fall Line may have been occupied to a similar extent. Archaic sites are least frequent in the Barrier Island Sequence, the Gainesville Ridges, Blue Ridge Mountains, the Okefenokee Basin, and the Cohutta Mountains. These results suggest that arguments for differential use of the Piedmont and the Coastal Plain physiographic provinces may not be entirely supported by the available evidence. In the very least, future survey-level research should strive to rigorously evaluate the test implications of Archaic settlement and foraging models. Such studies may benefit from the analytical use of predictive GIS modeling, as well as from the field recording of additional environmental variables typically not required on the Georgia Archaeological Site Form (e.g., locations of natural springs). The implications for research on the Middle Archaic subperiod in particular, and recommendations for data gathering, are made in later sections of this report.

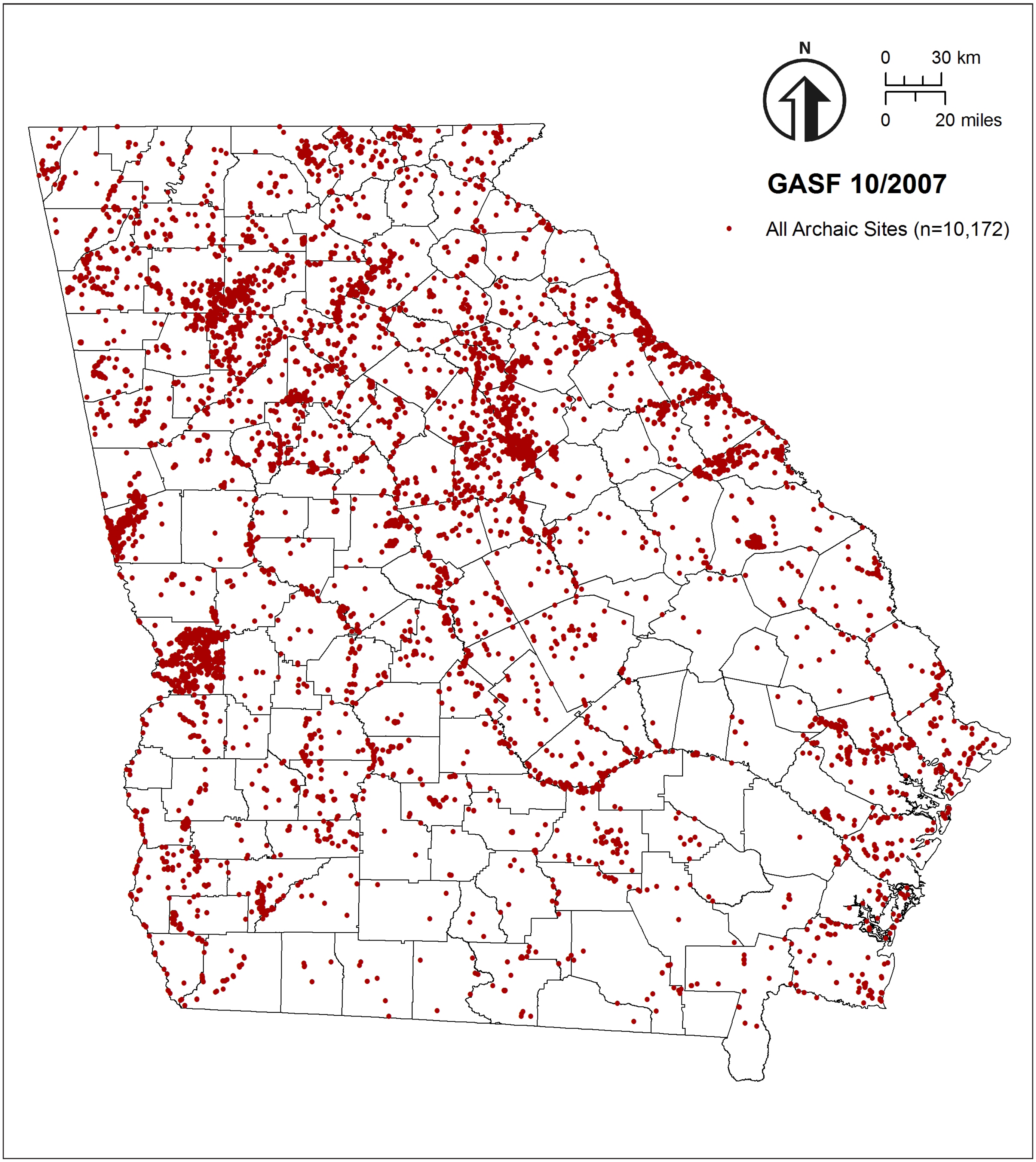


Figure 3.7 Distribution of all recorded Archaic sites in Georgia.

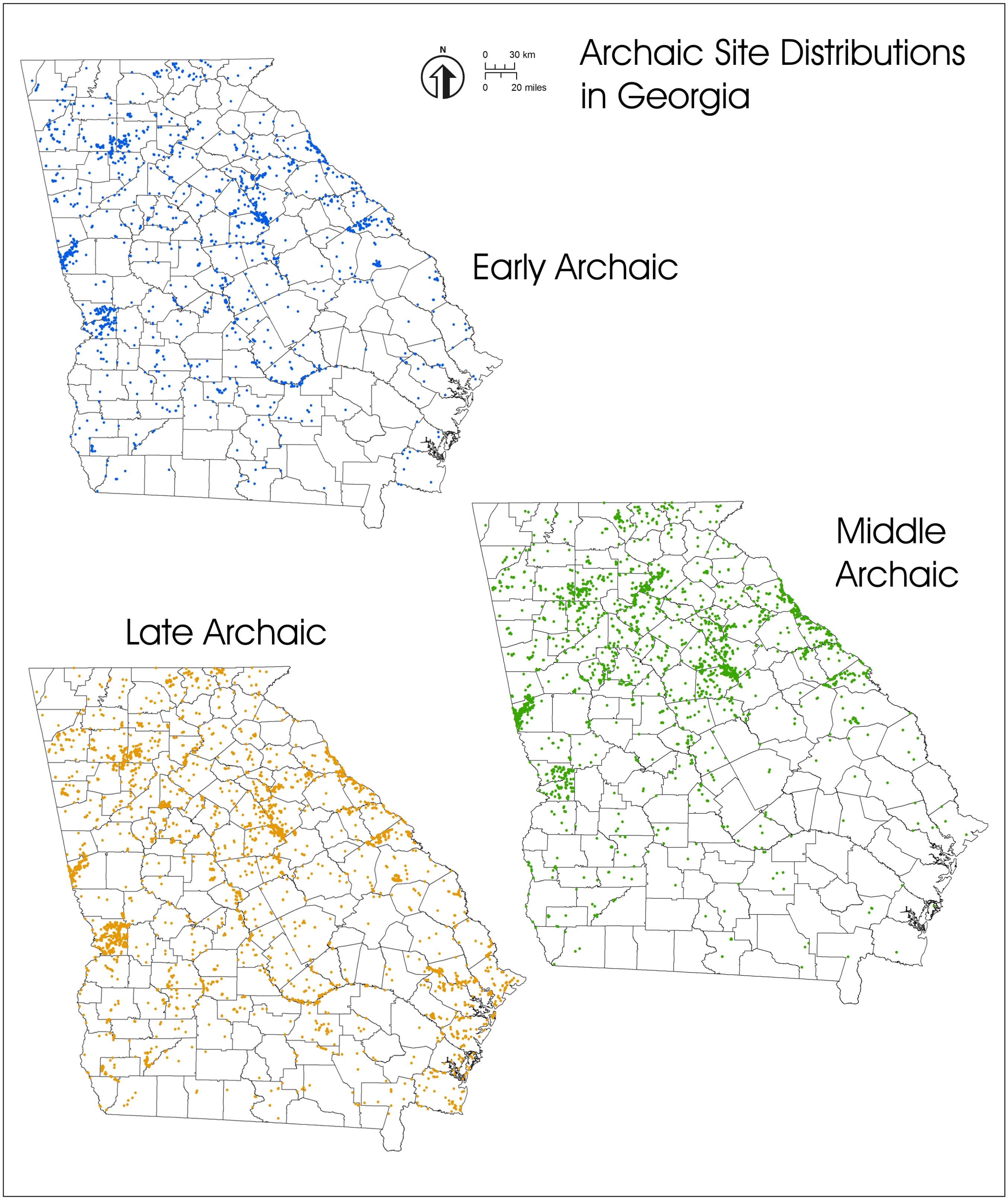


Figure 3.8 Distribution of all recorded Archaic sites in Georgia by temporal subperiod.

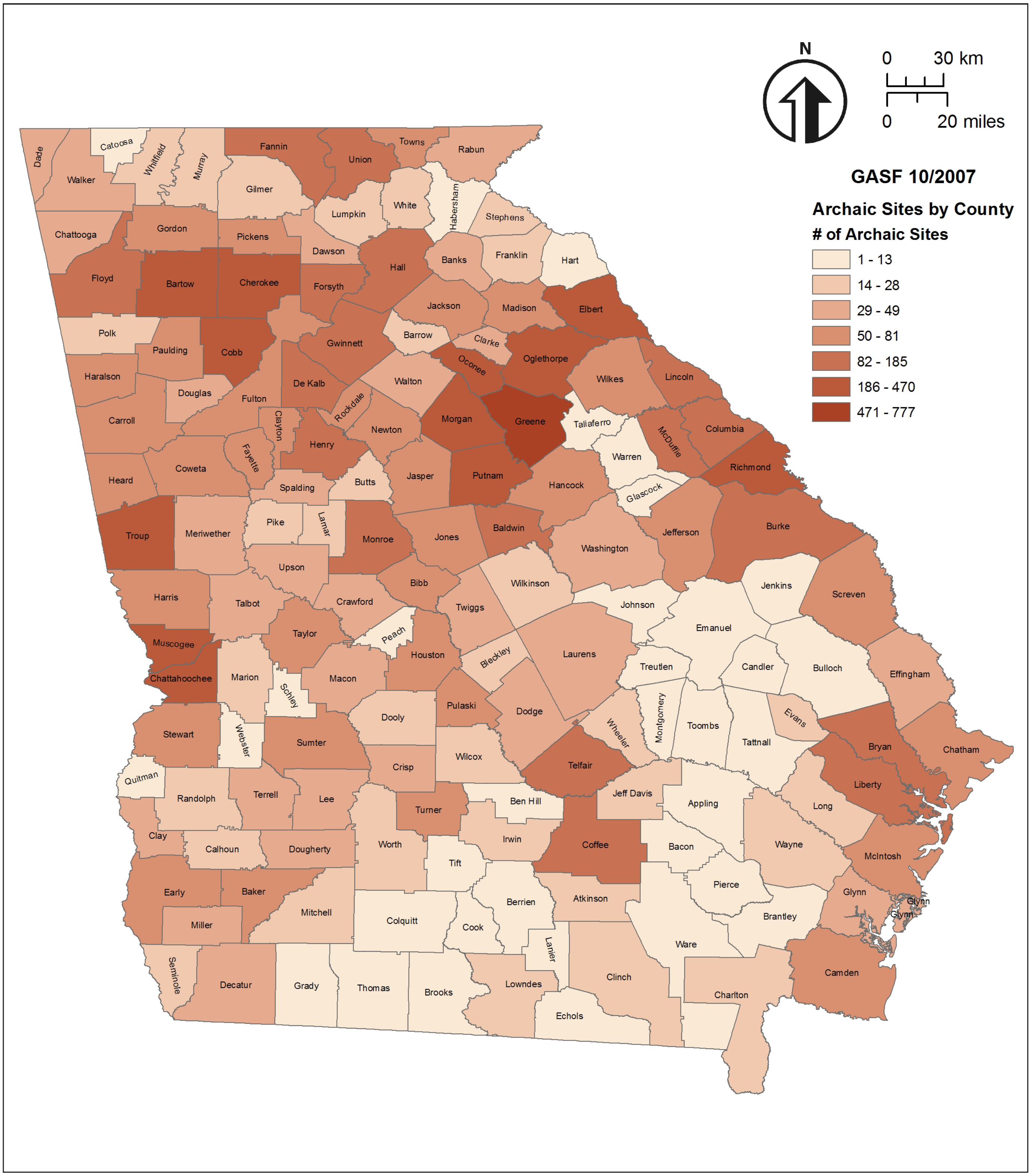


Figure 3.9 Distribution of all recorded Archaic sites in Georgia by county (raw quantity).

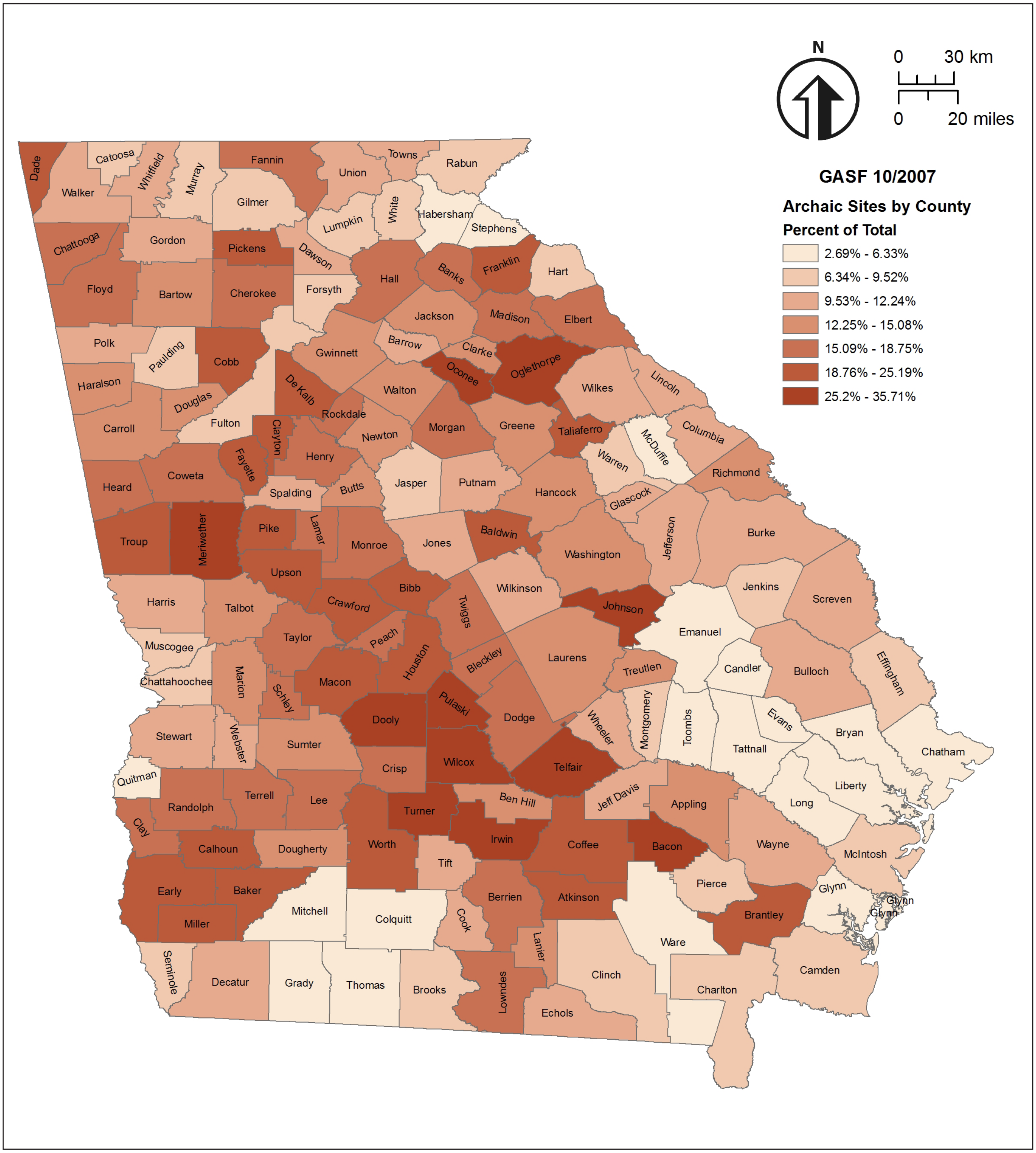


Figure 3.10 Distribution of all recorded Archaic sites in Georgia by county (percentage of total sites recorded).

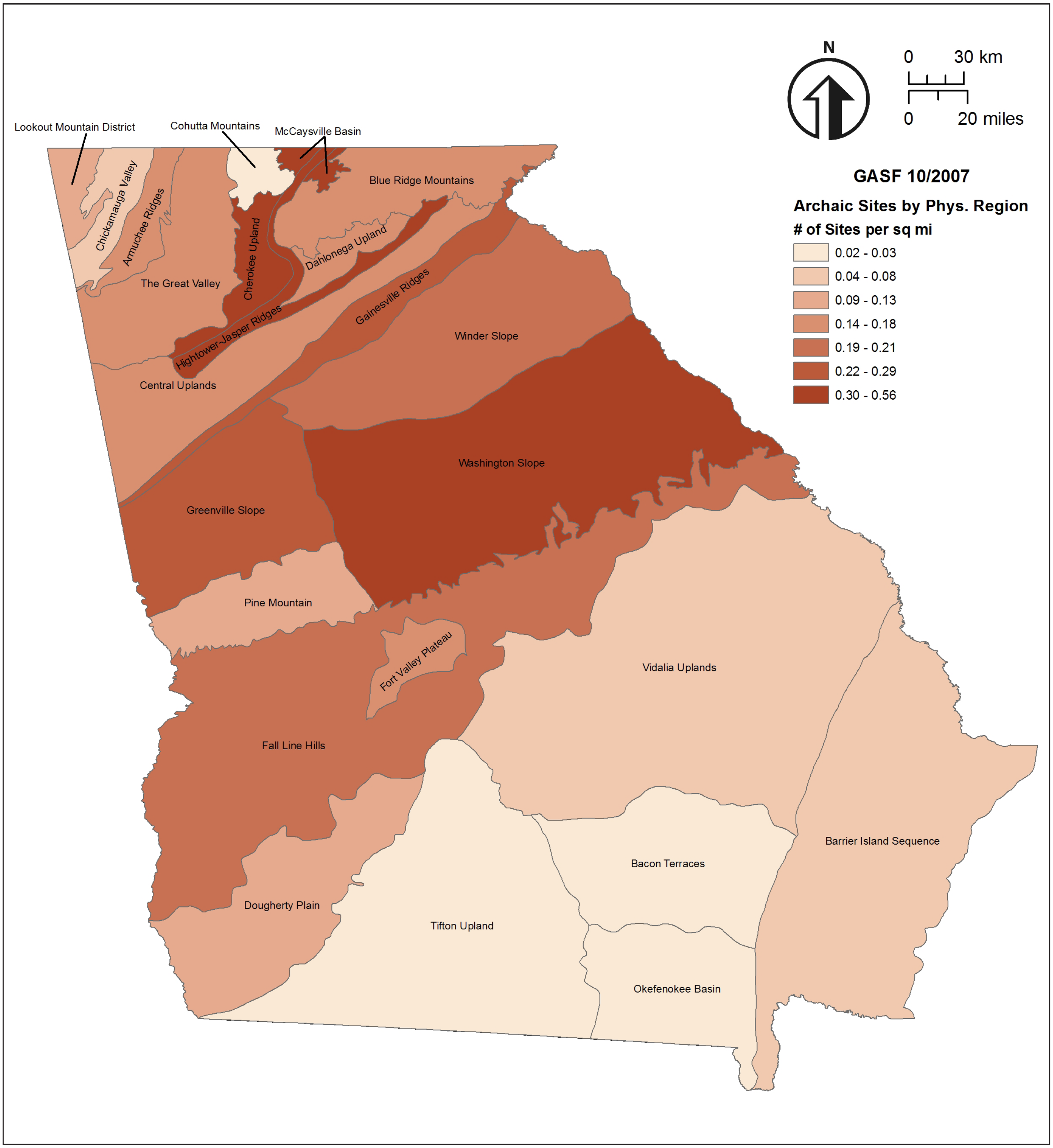


Figure 3.11 Distribution of all recorded Archaic sites in Georgia by physiographic district (number per square mile).

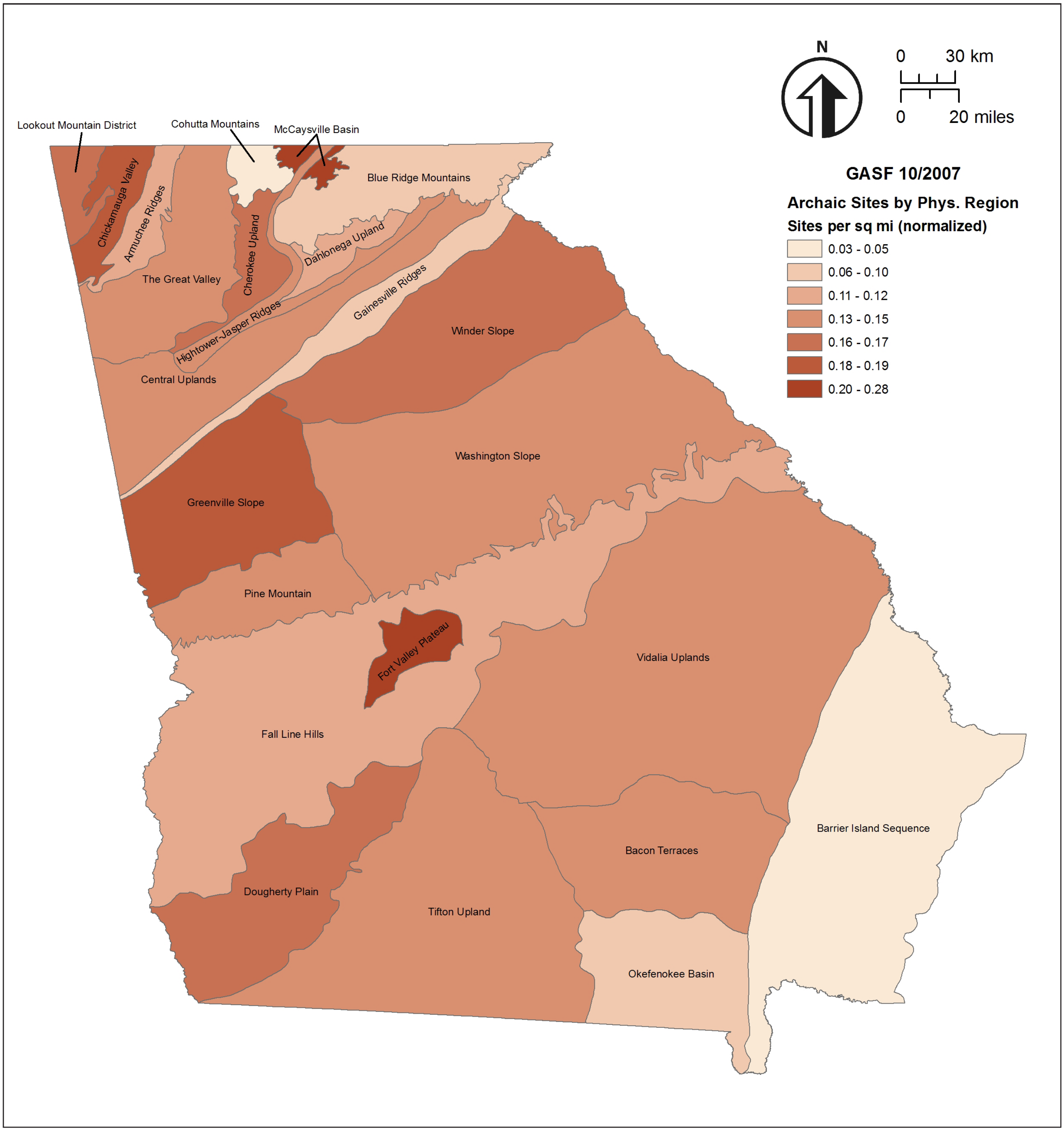


Figure 3.12 Distribution of all recorded Archaic sites in Georgia by physiographic district (percentage of total sites per square mile).

3.3 DISTRIBUTIONAL RESEARCH CONSIDERATIONS

There are some avenues of research that have not been pursued and certainly warrant attention in the future. For instance, we assume utilization of upland resources to be an almost exclusively Archaic practice, but how do site distributions, as provided by data in the GASF, support our understanding of resource procurement? Whitley and Hicks (2003) addressed this question peripherally in a comparison of site distribution across all temporal periods in the Northern Arc project area. They found a convincing correlation between Archaic sites and pathways linking upland resource procurement areas that did not exist for either earlier or later periods.

In the larger context of using statewide data, however, further research questions include an analysis of our ability to define short-term Archaic occupations or activity areas which may not have resulted in the discard of culturally-diagnostic materials. Are patterns of upland resource procurement locales observable if we are unable to affix a temporal indication? Are there other ways in which we need to approach mitigation efforts to clarify our understandings of intra-site activities and their relationship to offsite activity areas (often identified at completely different sites)? An answer to this might be basing mitigation efforts not on specific site locations alone, but requiring a more intensive examination of local or regional data to try and define patterns of off-site activities through catchment analyses or cost-distance evaluations, or other kinds of approaches.

4.0 GEORGIA'S MIDDLE ARCHAIC CULTURAL RESOURCES

In an article synthesizing research on the Middle Archaic in South Carolina and neighboring states, Blanton and Sassaman (1989:53) make the claim that:

> [T]he Middle Archaic period has remained something of an enigma, and attainment of a satisfactory understanding of cultural pattern and process for this period has been elusive. The nature of the archaeological record has itself stood as the primary impediment to advancement of our knowledge as it concerns the Middle Archaic. More often than not, sites of this period are small, deflated, low-density scatters. Diagnostic artifacts are simple and usually aesthetically unappealing. Thus, the Middle Archaic has traditionally attracted little interest among archaeologists seeking research topics.

Nearly two decades later, these perspectives continue to constrain Middle Archaic research in Georgia, and, as the case will make in this chapter, especially impacts the evaluation of the research potential and the archaeological significance of identified resources.

4.1 THE ARCHAEOLOGICAL DATABASE

Georgia's Middle Archaic database has almost entirely been generated from archaeological investigations mandated by federal, state, and local cultural resources laws, often with the aim of protecting significant resources considered eligible for listing in the National Register of Historic Places (NRHP). For the purposes of this report, therefore, it is useful to establish and compare the rate at which Middle Archaic sites have been determined or recommended NRHP-eligible. Furthermore, in order to ascertain the extent to which collected data has *actually* contributed to our understanding and knowledge of this cultural sub-period, it is helpful to determine how many of these eligible sites have, in fact, received intensive study in the form of archaeological data recovery.

According to information available in the Georgia Archaeological Site Files (GASF) accessed in October 2007, over 2,500 Middle Archaic resources have been recorded in the state. A large proportion (approximately 75%) of these resources, found at 1,891 locales, occur as archaeological deposits within multiple component sites. The remaining 625 Middle Archaic resources occur as single component sites. The vast majority of Middle Archaic resources have received only survey-level archaeological investigations, including sites eligible for listing on the NRHP. In fact, data in the GASF indicates that Middle Archaic resources have received intensive study at a rate far lower than that of any other cultural period, including the Early and the Late Archaic. When considering data provided in the GASF, however, it is important to note that information provided in the "Investigation Level" field is not always accurate. This is largely because updated site forms documenting subsequent Phase II testing or Phase III data recovery often fail to be submitted (Mark Williams, personal communication 2007).

There are also several limitations with site data collected from archaeological survey investigations as currently required by the state. Survey data tend to provide little information beyond that of the cultural affiliation of archaeological deposits, and, with Middle Archaic sites in particular, say nearly nothing about site structure or function, season or duration of occupation, or the extent to which locales were repeatedly visited. While coordinated data are generally reliable, the spatial dimensions are not always accurately measured or recorded, especially for individual cultural resources occurring within multiple component sites (Mark Williams, personal communication 2007). These and other limitations hinder the research community's ability to conduct regional-level analyses of settlement and mobility strategies using Geographic Information Systems (see, for example, Chapter 6.0 of this report).

Of the 1,891 multiple component sites, only 249 are considered eligible for listing in the NRHP (Appendix: Table 1). Unfortunately, site forms submitted to the GASF do not distinguish between the cultural components that are considered to be of archaeological significance or hold a research potential from those that are merely coincidental to the site. Therefore, we could not determine how many of these 249 sites were eligible for their Middle Archaic deposits. Also, and as explained above, it is difficult to accurately determine the most intensive level of investigations received at archaeological sites (see in particular the high rate at which "Unknown" is listed as an entry in this field within the table). If we count only sites clearly stated as having received Phase III archaeological data recovery investigations, then the GASF data would suggest that only 10 of the 1,891 multiple component sites recorded have been intensively studied. In other words, Middle Archaic resources in multiple component sites are being recommended eligible for listing in the NRHP at a maximum rate of 13 percent, but actually receive intensive study at the rate of 0.5 percent.

For single component Middle Archaic sites, the numbers are even lower. Of the 695 recorded, only 35 are considered eligible for inclusion in the NRHP (Appendix: Table 2). Of these, just two archaeological sites—9BI129 and 9HY321—are known to have been excavated (but see note in the table). In other words, single component Middle Archaic resources are being recommended eligible for listing in the NRHP at the rate of just 5 percent, and only a mere 0.02 percent have actually received intensive study.

In addition to the investigations of NRHP-eligible resources, a handful of early studies have contributed important information to our understanding of the Middle Archaic in Georgia. These sites include Lake Springs (9CB22), Sixtoe Field (9MU100), and Stone Mountain DA-4 (9DA9), and are discussed in greater detail in the next section. Even if these sites are counted, we would still find the rate of study to be exceptionally low, especially when compared to the rate at which sites from other temporal periods are investigated. For instance, based on GASF data, 4.6 percent of recorded Paleoindian sites, 3.7 percent of recorded Woodland sites, 2.9 percent of recorded Mississippian sites, and 6.2 percent of recorded Historic Indian sites have received intensive study. Although the Archaic Period has received comparatively little research attention, its overall rate of 2.5 percent of recorded sites is far greater than the 0.5 to 0.02 percent noted for the Middle Archaic subperiod alone.

What could possibly explain the dearth of effort taken to study this 3,000-year long period of Georgia's past? The lack of research interest is particularly curious given that our current understanding of this subperiod is based predominantly on information from sites in the Carolinas, with the Georgia archaeological record contributing relatively little to either model-building or their empirical evaluation (see Chapter 5.0 of this report). Part of an answer to the question may lie in the kinds of data researchers have been able to glean from the Middle Archaic archaeological record and the expectations they hold for what would constitute new or as yet unrecovered information. It is helpful then to briefly summarize the findings from some of Georgia's intensively studied sites as well as the results of recent survey investigations resulting in NRHP eligibility determinations for Middle Archaic resources. The intent here is to not only elucidate the range and classes of data that have and can be expected to be collected from these sites, but also highlight the line of reasoning typically employed to determine site function, use, and archaeological significance. The projects are listed in chronological order of their most intensive field investigation.

4.2 SOME KEY INVESTIGATIONS

4.2.1 Clark Hill River Basin Survey and Excavations at the Lake Springs Site (9CB22)

The Lake Springs shell midden site (9CB22) is located near the confluence of Lake Springs Creek and the Savannah River in the lower Piedmont. This site was identified during a 1948-1951 archaeological survey and excavation project related to the inundation of Clark Hill Reservoir. The Smithsonian Institution funded archaeological fieldwork prior to reservoir construction, and the project was a part of the National Park Service's River Basin Survey. Fieldwork was largely directed by Carl F. Miller, Joseph Caldwell, and Arthur R. Kelly. Archaeological survey resulted in the identification of over 200 sites, based mostly on surface finds. Limited excavations were undertaken at no more than 20 sites, and only a few of these intensive field studies were published by their original investigators (e.g., Miller 1949).

Data from the Clark Hill Reservoir survey and excavation project had not been synthesized until Daniel Elliott (1995) examined field notes and materials from collections in the Smithsonian Institution. Of particular interest to Middle Archaic research is Elliott's (1995:56-74) synthesis of data from the Lake Springs site. Diagnostic artifacts recovered from the site span the Middle Archaic through the Mississippian Period, and the freshwater mussel shell midden is associated with the Late Archaic component (Elliott 1995:57). The site is of importance to archaeological research in Georgia because Caldwell used the lithic artifact assemblage from a deeply-buried stratum to develop his argument for an Old Quartz Industry (Caldwell 1954; also see Caldwell 1951; Elliott 72-74, figure 19).

Elliott (1995:72) notes that an excavation area measuring 5-by-5 feet provided most of the materials for Caldwell's definition of Old Quartz. Underlying the shell midden and nearly three feet of culturally-sterile pure river sand, Caldwell encountered a 4-inch (10-cm) thick zone of dark brown sand with charcoal flecks. All of the Old Quartz materials were recovered from this deeply-buried zone. Pure river sand underlay the Old Quartz zone, and despite attempts to examine deeper strata, rising groundwater put a stop to Caldwell's efforts. During research for his report, Elliott (1995:60) confirmed the presence of diagnostic Morrow Mountain projectile points in the Old Quartz type collection assembled by Caldwell at the University of Georgia.

Other than publications defining the Old Quartz Industry, Caldwell never fully described his extensive archaeological investigations at the Lake Springs site. Prior to Elliott's (1995:56-74) summary, the only published results from the site were test excavations carried out by Miller (1949). Although he reconstructs and fully describes Caldwell's field results, Elliott does not provide a detailed interpretation specific to the Middle Archaic occupation at Lake Springs. Based on information provided in field notes, drawings, and photographs, none of the identified cultural features from the site are attributable to the Old Quartz zone.

What Elliott (1995:123, 130, figure 31) does offer, however, is a synthesis of Middle Archaic occupation in the Clark Hill survey area. He notes 89 Middle Archaic components recorded among the 203 sites identified in the survey area. Using comparative site type and distributional data, Elliott argues for a peak in the use of inter-riverine uplands during this subperiod (Elliott 1995:123), and his brief study broadly supports existing models of Middle Archaic settlement and foraging patterns (i.e., small groups of hunters and gatherers frequently moving between short-term camps).

4.2.2 Stone Mountain Site DA-4 (9DA9)

At a small hilltop site within Stone Mountain Memorial Park, Dickens (1964) encountered Middle Archaic deposits during a 1962 salvage archaeological survey and excavation project. The salvage project was conducted during the construction of a 600-acre lake, with some portions of the survey area already affected by land-disturbance activity (Dickens 1964:43). Site 9DA9 is situated along Stone Mountain Creek and was initially identified when artifacts were exposed in graded areas near the base of the hill. According to Dickens (1964:46), these artifacts include several small quartz blades characteristic of Caldwell's (1954) Old Quartz Industry. Based on the discovery, and the prospect of little historic plowing activity given exposed granite bedrock, Dickens believed subsurface features associated with the Old Quartz Industry could be buried in deposits on the top of the hill.

Excavations in a horizontal area of nearly 2,000 square feet were conducted over a two-week period. Artifacts were found to be scattered throughout a shallow humus layer located immediately above the granite bedrock and removed as a single excavation level (see Dickens 1964:45, Figure 2). By way of features, Dickens identified a few fire-cracked rocks but no evidence suggesting long-term habitation at this locale.

The lithic assemblage from 9DA9 predominantly contains artifacts attributable to the Old Quartz Industry. These objects are described as being similar to those recovered by Caldwell from the Lake Springs site. Based on published photographs (Dickens 1964, Figure 3), recovered projectile point types include the Morrow Mountain and several preforms commonly found in Middle Archaic assemblages. Artifacts diagnostic of later temporal units, including the Late Archaic and Early Woodland subperiods, were also recovered from the site.

Based on his findings, Dickens interpreted the Stone Mountain site to have functioned as a seasonal, short-term hunting camp used by frequently moving foraging groups. The absence of larger tools, such as nutting and grinding stones (artifacts that had been identified at Lake Springs), lead Dickens (1964:48) to suggest plant processing was perhaps only a minor component of the economic activities undertaken by prehistoric groups at this locale.

4.2.3 Sixtoe Field (9MU100)

Site 9MU100 is located on the floodplain of the Coosawattee River in north Georgia. The site was intensively studied by Kelly and his colleagues during an archaeological survey and salvage project in the Sixtoe Field unit of the proposed Carter's Dam in Murray County (Kelly et al. n.d.; Beasley 1972). Of interest to Middle Archaic research are the investigations within Excavation Unit K placed on a rounded terrace or knoll believed to represent the remains of a prehistoric sand levee (Beasley 1972:7; Kelly et al. n.d.:198). According to Kelly, local collectors had picked up Archaic Period projectile points from this raised area for several years.

Fieldwork at Site 9MU100 was conducted over several years beginning in 1962 (Kelly et al. n.d.), with excavation of the Archaic unit extending from 1964 to 1967 (also see Beasley 1972). The area of the site investigated by Excavation Unit K was found to be well-stratified. The top 18 inches consisted of a plowed but intact cultural midden where archaeologists had encountered human burials, pit features, and artifacts spanning the Late Archaic through the Late Mississippian (Kelly et al. n.d.:201-02). Middle Archaic deposits were encountered much lower, under two sandy alluvial deposits separated by an intermediate zone of compacted clay loam (Kelly et al. n.d.:203-04). Kelly believes this intermediate zone may have been an old living surface, but no cultural materials were encountered within this layer.

In all, nearly 36 inches (approximately one meter) of culturally-sterile deposits separated the upper cultural midden from the Middle Archaic component. Middle Archaic materials, including quartz and quartzite Morrow Mountain projectile points, were recovered from a 6-to-8-inch thick zone of leached sand immediately under the second alluvial sand deposit (Zone E), but the main concentration of Middle Archaic hearth features and lithic reduction debitage was found under the leached sand in a clay loam deposit (Zone F). These have been as scattered camp fires with partial rings of *in situ* stone, debitage, and finished tools (Kelly et al. n.d.:204). Three charcoal samples collected from these features were sent for radiocarbon dating, but only one was sufficient for analysis. This sample provided a calibrated date of 8,380 ± 200 years before present (Kelly et al. n.d.:200, 204 and Beasley 1972:101).

Beasley (1972) analyzed the lithic artifact assemblage and its spatial contexts in a 40-by-40-foot excavation area within Zones E and F in Excavation Unit K. No ground stone tools such as manos or nutting stones, or features (e.g., refuse pits, hearths, fire-cracked rock concentrations) were recovered from the Middle Archaic deposits at Sixtoe Field. In Zone E, concentrations of tools and debitage were interpreted to be lithic workshop areas, and Beasley's findings (1972:82-83) suggested that during this occupation, the site was not a primary locus of tool manufacture but rather used to conduct final shaping or resharpening of curated blanks or preforms. He also noted several circular and semi-circular arrangements of lithic debitage measuring around 2 feet in diameter; Beasley interpreted each small pattern to be the result of individual occurrences of tool processing, and from this suggested the site was occupied by a small group of people. In Zone F, Beasley (1972:83-85) identified a concentration of debitage and tools that suggested a different set of activities from late stage tool reduction interpreted for Zone E. Greater diversity in tool types suggested a more generalized set of lithic and food processing activities, although the precise nature of these activities or occupation type were not determined. Deposits from both zones suggested small groups of mobile foragers with limited artifacts and materials intermittently occupying this locale for brief periods of time. Differences in the tool assemblages from the earlier (Zone F) and the later (Zone E) Middle Archaic deposits suggests some occupational variability (Beasley 1972:90), reflecting seasonal differences in resource availability or possibly even activities conducted on a multi-year cycle.

4.2.4 Orkin Site (9CN27)

The Orkin site (9CN27) was first encountered by archaeologists during a survey and excavation project in Clayton County funded by the University of Georgia and Historical Jonesboro, Inc., (DePratter 1972). Orkin is multiple component archaeological site situated upon a series of low, sandy rises in an open field overlooking the Flint River (DePratter 1972:15). According to DePratter (1972:6, 14-15), the site was chosen for excavation because it was believed to contain the remains of a late prehistoric (i.e., Late Woodland, AD 800-1000) village.

During excavation, the late prehistoric component was found to have been severely disturbed by historic plowing activity, but under the plowzone DePratter found evidence of intact Middle and Late Archaic deposits (DePratter 1972:6, 15). Excavation of the undisturbed levels proceeded with the careful excavation and mapping of rocks, tools, and flakes (DePratter 1972:15-16). The Old Quartz or, as it is now more generally referred to, the Middle Archaic (also see DePratter 1975:11) occupation was estimated to cover an area of between 50 and 75 acres, of which approximately 1,200 square feet were excavated (DePratter 1972:19). While a final report discussing and illustrating these excavations and has not been published, DePratter (1972:19) notes over 175 quartz tools were recovered from the site representing an assemblage larger than those recovered from Lake Springs and Sixtoe Field. Tools recovered from the Orkin site include flake scrapers, projectile points, knives or blades, and a few hammerstones or anvils. DePratter (1975:11) states that no organic materials were recovered or features were encountered. In one area of the site, however, artifacts were distributed in a circular pattern 12 to 15 feet (4 to 5 meters) in diameter, which DePratter (1975:11) interprets to be a possible structure or activity area. No maps, photographs, or other drawings have been made available to ascertain the nature of this activity area.

4.2.5 Sibley Lithic Station (9CO126)

This is a deeply stratified site on a narrow levee on the Chattahoochee River in Cobb County. The site was excavated by Lawrence Meier in 1972 prior to sewer pipeline construction and results have been published only in a preliminary report (Meier n.d.). At the site, Meier (n.d.: 2-3) identified seven cultural strata (Zones I through VII), and excavated a 60-by-40-foot area down through Zone III and a 10-by-10-foot area through Zone VII. A large lithic assemblage was recovered from these excavations, including 416 tools. Archaeologists also encountered 22 cultural features, of which one (Feature 17 in Zone III) yielded a calibrated radiocarbon date of 7040 BC, placing it within the Middle Archaic subperiod. Although the entire content of these features had been collected for analysis, no report has been produced summarizing the findings.

From descriptions provided in Meier's short management summary, Feature 17 appears to be a refuse pit containing acorn and hickory nut shells. Meier (n.d.:3) also notes that five hearths measuring between 2.5 and 4.8 feet in diameter were encountered during excavation. The report does not clearly state the stratum that each hearth was encountered in, but based on information in DePratter's (1975:12) early summary of the Archaic Period, it is assumed these hearths are associated with the Middle Archaic occupation. Although excavations at the site appear to have yielded information that could contribute substantially to our understanding of the Middle Archaic in north Georgia, no final report summarizing findings and analyses is available.

4.2.6 Gregg Shoals Site (9EB259)

The site is located at the confluence of Pickens Creek and the Savannah River in the Georgia Piedmont. The site was excavated in the early 1980s by the South Carolina Institute of Archaeology and Anthropology to mitigate NRHP-eligible resources associated with the construction of the Richard B. Russell Reservoir. Archaeological fieldwork at the Gregg Shoals site included the step excavation of a large 8-by-8-meter block divided into 64 1-by-1-meter units and dug in 10 cm by hand (Tippitt 1996:77). The Middle Archaic deposits occurred mainly within Zone VII (Tippitt 1996:140-147; 161), and contained Morrow Mountain biface and biface fragments, and features including dark soil stains, several rock clusters, and *in situ* evidence of quartz tool manufacture (Tippitt 1996:173). Other cultural features noted in Zone VII include a hearth of fire-reddened quartz and granite rocks as well as a flake cluster with primary flaking debris and tools.

Altogether the evidence suggests a quartz tool manufacturing area that likely served to replace exhausted rhyolite bifaces that were curated by hunting and gathering groups visiting the locale (Tippitt 1996:143-145). Tippitt (1996:160, 174) notes that many of the rhyolite tools recovered from the Middle Archaic contexts had lateral margins exhibiting a high degree of edge maintenance. With the quartz assemblage, all stages of tool production were exhibited, from initial reduction, discarded broken bifaces, preforms, to thinning flakes from final shaping and tool resharpening (Tippitt 1996:160). The quartz materials used appear to have mainly been collected as river cobble (Tippitt 1996:173). No rhyolite debitage was recovered from archaeological excavations. Tippitt (1996:160) suggests that the discard of rhyolite tools and the manufacture of replacements from local quartz materials may point to a high mobility foraging strategy and seasonal occupation of locales. In one excavation area, rock features and a shallow basin-shaped pit were associated with a quartz primary reduction activity zone. A small piece of charred hickory nutshell from a pit feature yielded an AMS radiocarbon date of 7390 ± 60 BP.

4.2.7 Rae's Creek (9RI327)

In 1988, archaeologists from Georgia State University conducted archaeological excavations at the Rae's Creek site in Richmond County, Georgia (Crook 1990). The project was conducted to mitigate effects of road construction and was undertaken on behalf of the Georgia Department of Transportation. The site is located on a point-bar formation within the western floodplain of the Savannah River, just north of Rae's Creek. The site is situated in the Fall Line Hills region marking the transition between the Piedmont and Coastal Plain physiographic provinces.

The landform upon which the Rae's Creek site is located rises four meters above the surrounding floodplain and the summit is relatively level and extends to an area of approximately 17 acres (Crook 1990:22). Archaeological deposits dating from the Early Archaic to the Colonial Indian Period were encountered across the summit and were found to a depth of approximately 1 meter. Cultural materials were most dense in the southern half of the site, particularly in the middle and eastern side of the point bar, and archaeological data recovery investigations were concentrated here within three designated areas (i.e., Stallings Area, ColonoIndian Area, and Morrow Mountain Area).

Evidence of occupations dating to the Middle Archaic was recovered from all three designated excavation areas, but the subperiod was most intensively studied in the Morrow Mountain Area (Crook 1990:115-126). The Middle Archaic occupation here was identified at a depth of 270 cm below modern ground surface and less than 95 cm of culturally sterile alluvial sands (Crook 1990:115). An area totaling 57 meters square was excavated within the Morrow Mountain stratum. Hand excavation proceeded in 10-cm levels within natural stratigraphy.

This area of the site contained a deeply buried stratified sequence spanning the Early to Middle Archaic. Seven carbon samples were collected for direct dating, and the results have been important in reconstructing a complete Morrow Mountain chronology. Sporadic occupation of Rae's Creek continued from the Late Paleoindian through the Early Archaic, and intensified in the first centuries of the Middle Archaic, beginning around 5600 BC. Crook (1990:125) suggest that these occupations were dramatically different from those of the preceding Early Archaic subperiod. There is a noticeable shift in processing tools from locally available quartz materials, with the use of Coastal Plain chert greatly reduced but still evident at the site. The large quantities of charred hickory and acorn nut shells indicate a focus on the gathering of resources from the nearby deciduous forests. Data from the site also suggests settlement for longer durations and possibly reduced movement into the Coastal Plain than that seen for the previous cultural phases.

These trends become pronounced during the Morrow Mountain phase of the Middle Archaic (beginning as early as 5450 BC and continuing to 4700 BC). During this time, the site appears to be repeatedly occupied by small foraging groups during the summer and fall months when nuts (including hickory, acorn, and walnuts) and fruits (e.g., muscadine, hackberry, and maypop) could be gathered (Crook 1990:126). The recovered lithic tools suggest that hunting also played a major role in Morrow Mountain subsistence activities conducted at Rae's Creek, and the authors suggest the small size of projectile points are indicative of bow-and-arrow technology. Hammerstones and millstones recovered from the site were likely used for lithic reduction as well as for grinding of plants (e.g., nuts). These findings have all been significant to our understanding of changing cultural patterns during the mid-Holocene, but the site's most important contribution is from the direct dating (i.e., radiocarbon) of strata and the resulting complete chronology for Early and Middle Archaic in the Savannah River region.

4.2.8 Phinizy Swamp (9RI178)

This was one of three sites excavated to mitigate the effect of construction for the Bobby Jones Expressway extension in the floodplain of the Savannah River in the Fall Line Hills section of the Upper Coastal Plain (Elliott et al. 1993). The site is located on an alluvial feature that rises only slightly above the present-day water level of Phinizy Swamp, but during the late prehistoric period would have been situated along the banks of Rocky Creek. Earlier on, the site would have been on a point bar formation of a former channel of the Savannah River. The most intensively occupied area of the site would have faced a broad channel cut (Elliott et al. 1993:97). Based on stratigraphic data, the site provided a complete projectile point type sequence for the Archaic Period. Results from data recovery investigations indicate increasing intensity in use of the locale from the early to late subperiods of the Archaic, with the most intensive use occurring during the transitional Middle-to-Late Archaic.

An interesting finding from the site is evidence of the role of clay, plastered on the walls of cooking pits, in the development of prehistoric cooking technology. While several archaeologists have proposed that pottery technology developed from earlier stone bowl technology (see, for instance, Sassaman 1993), the occurrence of daub in the Middle/Late Archaic levels of the Phinizy Swamp site, and indicative of cooking rather than architecture, suggests the opposite may have been the case in some regions of the Southeast (i.e., soapstone vessel technology evolved from a pre-existing pottery technology; see Elliott et al. 1993:364-365).

4.2.9 Ocmulgee Wildlife Management Area, Archaeological Data Recovery at Site 9PU57

Data Recovery investigations undertaken at the site in 2003 provided a relative chronology of Middle to Late Archaic projectile points in the Upper Coastal Plain (Benson et al. 2005). The study was also important because it demonstrated the nature of Middle Archaic sites associated with the Morrow Mountain biface for the Coastal Plain, an area that has generally been understood as lacking a strong presence of sites dating to this period. The site was most intensively occupied during the phases when Ledbetter, Pickwick, and Elora projectile point types prevailed. These point types have generally been attributed to the Late Archaic subperiod. Research at the site contributes in clarifying the cultural relationships of these lithic tool forms. Based on their stratigraphic contexts, the authors suggest that these point types may belong to the late Middle Archaic, but in the absence of absolute dating results any conclusions are difficult to ascertain (Benson et al. 2005:171-173).

On comparing the Middle Archaic occupations of site 9PU57 to other sites in the Ocmulgee Wildlife Management Area (i.e., 9PU37, 9PU69, and 9PU71), the authors were able to draw important insights on Middle Archaic occupations of the Coastal Plain. For instance, site 9PU57 had evidence of more frequent visits during the Morrow Mountain phase than compared to other sites; this can partially be explained by the fact that soils here were well-drained and therefore the locale may have supported vegetation of a different kind (e.g., mast producing trees). Also, given wetter environmental conditions during the Morrow Mountain phase in general, occupations in the Coastal Plain may have restricted to landforms that were elevated and well-drained (Benson et al. 2005:178-179). In this respect, archaeological data recoveries in the Ocmulgee Wildlife Management Area illustrate the interpretative potential of simultaneous and comparative excavations at sites with similar cultural components.

4.2.10 Jack Straw Site (9BI129)

This site is discussed here because it is one of two NRHP-eligible single component Middle Archaic resources known to have received Phase III archaeological data recovery investigations. A report on these excavations has not yet been completed, but a description of the site may be compiled using results from survey investigations (Bland et al. 2001). The site was identified during an intensive cultural resources survey of 1,226 acres owned by the Cherokee Brick and Tile Company in Bibb County, Georgia. The site is located on the eastern interior floodplain of the Ocmulgee River, along the western side of a slough.

The site was identified through shovel testing excavated at 15-meter intervals. Artifacts were recovered from 45 to 90 cm below surface in brown loam soils. The site contains a low to moderate density lithic scatter of thermally altered chert debitage and biface fragments. Fire-cracked rock was also recovered from the site. The area of highest density of lithic artifacts measures approximately 60 meters long and 30 meters wide. No diagnostic artifacts were encountered but the survey report suggests the cultural deposits date to the Late Archaic subperiod. The site form on file at the GASF, however, indicates the site to be a Middle Archaic lithic scatter. Until further reports become available, no precise cultural affiliation can be made.

4.2.11 Blue Ridge Reservoir Reconnaissance and Survey

A 1993-1994 Phase I level archaeological reconnaissance and survey of 2,100 acres (including areas exposed during from a drawdown) of a Tennessee Valley Authority reservoir in Fannin County, Georgia, identified three NHRP-eligible Middle Archaic sites (i.e., 9FN171, 9FN209, and 9FN210) (see Riggs and Kimball 2005). Visual reconnaissance was used as the survey technique in areas that were below pool surface, and close-interval shovel testing (spaced approximately 20-meters apart) was used in areas above pool surface and covered by vegetation (Riggs and Kimball 2005:23). This study has been a welcome addition to the relatively small number of archaeological surveys in the Blue Ridge region of Georgia and contributes significantly to our understanding of Archaic settlement patterns in the Appalachian Highlands in general (also see Stanyard 2003:110).

During survey, 85 archaeological sites were identified in the study area, of which 32 yielded evidence of occupation during the Middle Archaic (Riggs and Kimball 2005:169). The Middle Archaic components were identified largely by the occurrence of diagnostic projectile points, including Morrow Mountain (I, II, and Triangular), Sykes, and Guilford lanceolate types. Many sites were not considered to have research potential or archaeological significance beyond the information collected from survey investigations. It is interesting to note that spring heads were often identified near the location of many sites containing Middle Archaic resources, including 9FN176, 9FN189, 9FN190, 9FN193, 9FN209, 9FN210, 9FN215, and 9FN221. Some Middle Archaic resources were single component sites (e.g., 9FN176, 9FN180, 9FN185, 9FN202, and 9FN203), but the majority were coincidental with archaeological deposits dating to later periods. Of the 32 identified, only three archaeological sites were recommended eligible for listing in the NRHP for their Middle Archaic component. An assessment of archaeological significance was based on site integrity and the potential for intact cultural strata (Site 9FN171), or artifact density and the potential for the preservation of discrete features (sites 9FN209 and 9FN210).

4.3 DISCUSSION

Several trends on the identification of Middle Archaic resources and the determination of research potential and archaeological significance may now be summarized. The implications of these trends for future research are presented in the final chapter of this report. The most concerning issue at hand is the low rate at which Middle Archaic resources are being investigated through intensive archaeological testing and data recovery investigations. As mentioned above, the number of Middle Archaic components that have been recommended eligible for listing on the NRHP is comparatively minor when compared to the number of resources that are identified through survey. The sites that tend to be determined significant are typically those that have intact archaeological deposits, a high likelihood for preserved cultural features, and a potential for yielding important chronological information (e.g., well-defined stratigraphic contexts suited to developing projectile point chronologies). Sites that meet these criteria for significance are typically found on alluvial landforms, and are often the result of chance environmental conditions (e.g., hydrologic conditions that support the build up and the preservation of sediments dating to the mid-Holocene). Sites situated on ridge and hill tops, however, tend not to meet these criteria and are rarely studied (an exception is the Stone Mountain site 9DA9). What we need to ask is whether the criteria and process used to evaluate Middle Archaic sites for their archaeological significance results in: (a) a biased sample of sites studied; and (b) precludes serious study of sites located on non-alluvial landforms? We also need to ask if data collected at the survey level is sufficient in determining the NHRP eligibility of Middle Archaic components.

One reason a Middle Archaic site is not promoted for further study is because archaeologists believe the research potential has been exhausted at the survey level. In the State of Georgia, archaeologists tend to employ survey methods of visual examination and shovel testing along transects spaced 30 meters apart. Ethnoarchaeological research suggests the size of hunting and gathering camps in societies with a high degree of residential mobility tends not to exceed 10 meters in diameter (see Chapter 5.0). Given these dimensions, there is a chance that two consecutive shovel tests yielding Middle Archaic materials are encountering deposits from two separate occupations. The concern, therefore, is not just whether shovel testing at such a large interval has exhausted the research potential, but also whether the data collected is sufficient in making determinations of occupation type or frequency of use (also see Chapter 7.0 of this report), and subsequently evaluations for eligibility to the NRHP.

Given that so few Middle Archaic sites located on ridge tops and in forested locales away from floodplain environments have received archaeological testing and data recovery investigations, it may be beneficial to conduct more intensive studies of these sites, even if only to assess our assumption that informational potential was truly exhausted at the survey level. It is also helpful to examine if our expectations for the kinds of data considered important is appropriate for Middle Archaic resources. Because many occupations dating to these periods were short-term, we would not expect to find much in the way of cultural features or if features existed they would be ephemeral. Even in the absence of features, however, there may still be important data that can be collected from these sites, particularly if closer-interval units were excavated.

A final important trend noted from some of the previous studies described above is that comparative archaeological investigations conducted across multiple resources and over large areas or tracts contribute particularly meaningful information on Middle Archaic lifeways (see, for instance, the archaeological data recovery projects in the Ocmulgee Wildlife Management Area). Because Middle Archaic populations moved their residences frequently, regions must be studied as sites *writ large*. Comparative analyses are not limited just to data collected from excavation projects, however, and it is certainly possible to use the results from survey and testing investigations to build and test models, draw interpretations, and propose new insights that can be evaluated by future researchers. Because archaeological surveys of large tracts have become increasingly infrequent, information collected and stored in GASF holds a growing importance in addressing any regional level research questions. If the GASF database is able to delineate areas of no finds, if survey investigations recorded not just the size of the site but the dimensions of individual components, and if the environmental attributes of these locales (e.g., the presence of spring heads) were more systematically documented, we may be able to more easily utilize survey data in the future to develop and test more rigorous models for the Middle Archaic (also see Chapter 6.0 of this report).

5.0 MIDDLE ARCHAIC RESEARCH CONCERNS

Research on the Middle Archaic has focused on a diverse array of issues, including chronology building; studies on lithic procurement, production and technological variation; seasonality and the advent of horticulture; the development and expansion of regional trade networks; and the intensification of political and social differentiation. The subperiod spans approximately 3,000 years in Georgia and is generally understood as a cultural response to the establishment of modern biotic communities (but see discussion in Chapter 2.0, this report). It is during this phase of the Archaic that an increase in regionalization occurs—likely a result of population growth and packing—and foraging territories shrink. Settlement strategies shift from a focus on movement within drainage systems to more generalized patterns that include inter-riverine zones and uplands (e.g., Sassaman 1989).

Across the South Atlantic Slope, Middle Archaic adaptations appear to have been broadly similar (see Anderson 1996), and therefore it is possible to use insights from research projects conducted in the Piedmont and Coastal Plain regions of the Carolinas to develop a research context for these physiographic regions in Georgia. For Middle Archaic sites in Georgia's Blue Ridge, Cumberland, and Ridge and Valley physiographic provinces, we can draw upon the results of research from eastern Tennessee.

5.1 A HISTORICAL PERSPECTIVE ON RESEARCH

Together, Joffre Coe of the University of North Carolina and Joseph Caldwell of the University of Georgia played important roles in defining the Middle Archaic for the Piedmont and the Coastal Plain regions of the South Atlantic Slope, and provided an initial set of insights into mid-Holocene cultural adaptations. Following investigations conducted in the North Carolina Piedmont, Coe (1964) presented the first formal definition of the Middle Archaic, establishing a temporal range and a stylistic chronology of morphological changes in projectile point types. In Georgia, Caldwell encountered what are now known to be Middle Archaic materials during his excavations at well-stratified sites on the Savannah River (Caldwell 1952, 1958) and like Coe noted stylistic similarities between the lithic assemblages of these buried riverine sites and the small, ubiquitous lithic scatters on the ridge tops and ridge slopes of the Piedmont.

At the Lake Springs site on the Savannah River, for instance, Caldwell (1954) isolated what he had termed the "Old Quartz Industry" in a pre-ceramic, alluvially-sealed deposit and later (Caldwell 1958:9) assigned the quartz-dominated assemblages eroding from ridge top sites to the same complex. Both Coe and Caldwell had attributed Middle Archaic settlement patterning to highly mobile hunter-gatherers with small co-resident group size and a lack of site re-occupation (Coe 1952:30; Caldwell 1958:9). The term "Old Quartz" has since lost its classificatory usefulness, however, due in large part to the predominance of this lithic material in the artifact assemblages of earlier and later cultural periods and phases (Goodyear et al. 1979:108; Johnson 1981).

Coe's research was instrumental at developing a relative chronology for regional Middle Archaic cultures. Using evidence from stratified sequences in North Carolina, Coe delineated the beginning of the Middle Archaic by the replacement of notched hafted bifaced with stemmed varieties, and noted morphological changes in these projectile points over time. Three projectile point types dominate the Middle Archaic sequence in North Carolina (Coe 1964:35-43): Stanly (triangular blade point with narrow, straight-sided, vertical stem), Morrow Mountain (isosceles triangle blade with contracting stem), and Guilford (lanceolate point with the widest point near the center). Radiocarbon dates indicate the Stanly phase lasted about 450 years, while the Morrow Mountain lasted about 1,800 years.

Coe's Stanly-Morrow Mountain-Guilford sequence has generally held up in the Georgia Piedmont, although at sites such as Lake Springs and Gregg Shoals in the Savannah River valley, researchers have noted a hiatus in the stratified sequence where they would have expected to encounter Guilford materials. During recent archaeological data recovery investigations at a buried Middle Archaic site (9HY321) on the floodplain of Walnut Creek in Henry County, Georgia, archaeologists did encounter some Guilford points, so it is possible that the Savannah River sites mentioned above simply lacked Guilford phase occupations. In South Carolina, survey investigations in the inter-riverine regions of the Piedmont have regularly yielded Morrow Mountain and Guilford materials, while Stanly points have been comparatively rare (Taylor and Smith 1978; Goodyear et al. 1979). While quartz began to be widely used throughout the rest of Georgia, chert continued to be used in the Coastal Plain due to its local availability (Stanyard n.d.), especially in the Flint River valley. Other artifacts determined to be characteristic of this period include ground and polished stone tools (e.g., atlatl weights, nutting stones, grinding stones and pestles, and net sinkers), a variety of bone tools, flaking tools, and scrapers (Ford and Willey 1941:333; Griffin 1967:178; Stoltman 1978:715; White 1988:53).

One of the first small hill-top excavations in Georgia was undertaken by Dickens (1964) at Stone Mountain (also see Canouts and Goodyear 1985:181). Dickens described the Old Quartz assemblage as containing ovate blades with the absence of heavy-duty stone tools. Based on the presence of shallow, relatively undisturbed artifact remains, Dickens (1964:46) interpreted the site as a seasonal, short-term hunting camp of Early and Middle Archaic peoples. Along with John Kelly's (1972) masters thesis work in North Carolina, Dickens's study represents the first example of research aimed at understanding the structure of Middle Archaic sites through excavation (Canouts and Goodyear 1985:181). Examples of early research at stratified sites in Georgia include excavations at the Lake Springs, Sixtoe Field, and Orkin sites (see Chapter 4.0 in this report).

After 1970, research on the Middle Archaic in the South Atlantic Slope began to reflect more broad changes in the anthropological study of culture as ecological systems, and an attempt to explain cultural change as adaptive responses to social and natural environments. Increasingly, the Archaic period was seen as a transitional stage between the big-game hunters of the Pleistocene and the horticulturalists of the Woodland period. Its coincidence with the mid-Holocene climatic interval of maximum post-glacial warming, commonly referred to as the hypsithermal or altithermal, has also contributed towards a tendency to explain Middle Archaic cultural, social, economic adaptations to changes in the environment and resource structure of the Piedmont and Coastal Plain (but see Chapter 2.0 of this report).

In addition, beginning in the 1970s is the increasing number of federally mandated cultural resource management (CRM) projects in the region, resulting in the identification of numerous Archaic sites in both riverine and inter-riverine settings. Several large-scale CRM projects in the Southern Piedmont were identified. Included in these are the excavation of stratified sites submerged during the construction of the Richard B. Russell Reservoir along the Savannah River (e.g., the Gregg Shoals site [9EB259] and the Rucker's Bottom sites; see Anderson and Joseph [1983], Anderson and Schuldenrein [1985], Tippitt and Marquardt [1982], and Tippitt [1996]), and the comparative analysis of data from single-component upland lithic scatters (House and Ballenger 1976; Canouts 1976; Cable et al. 1978; House and Wogman 1978; Goodyear et al. 1978). These studies have contributed significantly to our understanding of Middle Archaic settlement patterns and mobility strategies (see Canouts and Goodyear [1985] for an early review of this research), and have been foundational to later graduate research projects (e.g., Sassaman 1983, 1991; Blanton 1984).

In recent years, revisionist research has led to the recognition of considerable sociopolitical variability between Archaic hunter-gatherer societies in the Lower Southeast (e.g., Sassaman 2005:79). Within this spectrum of complexity, however, the Middle Archaic populations of the South Atlantic Slope continue to be seen as relatively simple, practicing a generalized foraging strategy with frequent residential moves, an expedient tool technology, and having more egalitarian than hierarchical social relations (e.g., Sassaman 2005:98). Failing to exhibit some of the more assumptive signs of organizational complexity—including sedentism, the repeated use of certain locales, and socioeconomic differentiation—these populations have been characterized as a "tradition of resistance" (see Sassaman 2001a) or a culture that was deliberately oppositional to their non-egalitarian neighbors (i.e., the Shell Mound Archaic cultures) and Early Archaic predecessors.

5.2 SETTLEMENT PATTERNS AND MOBILITY STRATEGIES

Whether it was for optimal exploitation of food resources or for social reasons, settlement data from the Carolina Piedmont (Caldwell 1958; House and Ballanger 1976; Claggett and Cable 1982; Sassaman 1983; Cable 1992; also see Anderson 1996:169) supports arguments for a high mobility foraging strategy among Middle Archaic populations in the South Atlantic Slope. In the Piedmont, archaeologists have found little evidence for differentiation between riverine and upland site, and limited accumulation of midden refuse (as would more typically be expected for locales used over extended periods of time or repeatedly over many years, for instance, the exploitation of seasonally available resources). Blanton and Sassaman (1989:59) describe Piedmont Middle Archaic settlements as small and diffuse, yielding simple and redundant assemblages, and exhibiting a relatively high degree of inter-site density. Data from archaeological surveys in the region indicate many more sites date to this sub-period than for the Early Archaic, but this does not necessarily indicate an increase in population density (see Anderson 1996:157-59). An increase in the number of sites may simply be a consequence of intensive foraging strategies and a rise in the frequency of residential moves.

Dense concentrations of sites have been noted across the Southern Piedmont (identified by the diagnostic Morrow Mountain point), and within Georgia these sites tend to be situated along the upper reaches of the Chattahoochee, Oconee, and Savannah Rivers (Anderson 1996:163, 169). In South Carolina, Goodyear and colleagues (1979:131-145) noted that sites in the inter-riverine Piedmont appear to be geographically extensive and show little assemblage diversity. Such sites have been interpreted to be limited or specialized activity locales that represent resource exploitation or other distinct functions. Activities at these sites may have included hunting, nut gathering/ processing, and the procurement of lithic raw materials (Goodyear et al. 1979:147-178). As discussed above, most of the lithic artifacts recovered from these sites imply an expedient tool manufacturing technology with tools having relatively short use-lives.

Much of our understanding of Piedmont settlement patterns is based on data recorded in state archaeological site files. Blanton and Sassaman (1989) point out a few caveats in making any simple interpretations from these sources of information. For one, many lithic scatters have failed to produce diagnostic artifacts, and there is a tendency to attribute unidentifiable lithic scatters to the Middle Archaic. Hence, if we include data from all quartz-dominated lithic scatters in a regional-level study, there is a possibility for Middle Archaic sites to be over-represented. However, if we use the presence of diagnostics as the only identifier, then sites dating to the Middle Archaic risk being under-represented.

Even when soils are relatively undisturbed, archaeologists have recovered little by way of evidence of structures or cultural features during the excavations of upland sites. An illustrative example is the Stone Mountain site DA-4 (9DA9) discussed in Chapter 4.0 of this report. Canouts and Goodyear (1985:185) have suggested that in these cases, the most productive strategy for understanding site structural patterning is through intra-site spatial analysis. At the upland Windy Ridge site (House and Wogaman 1978:112-125, Figures 19-24), for instance, the spatial distributions of raw material types across the site identified definite clustering of quartz Morrow Mountain points with quartz debitage, and the delineation of possible activity areas.

In contrast to the settlement patterns noted for the Piedmont, Middle Archaic sites in the Ridge and Valley province tend to be concentrated along major drainages, like the Tennessee River, and to a lesser degree the Chattahoochee and Coosa Rivers. These sites have been identified mostly on the basis of cultural features exposed on modern ground surface, including extensive shell and earth-midden deposits. In the Ridge and Valley, it has been suggested that Middle Archaic populations occupied the comparatively restricted riverine environments for at least a part of the year (Anderson 1996:164), exibiting foraging adaptations similar to those seen in the Lower Piedmont in those areas aside from the Tennessee River valley (Anderson 1996:169; also see Chapman 1985).

The relatively low number of Middle Archaic sites recorded in the Coastal Plain has somewhat limited our understanding of the Middle Archaic settlement patterns in this physiographic region. A great deal of research emphasis has been placed on explaining why this province was not more extensively utilized (Elliott and Sassaman 1995). Compared to the Piedmont, there appears to be a lesser concentration of Middle Archaic sites in the lower Coastal Plain, particularly along the Chattahoochee, Flint and Savannah Rivers. Because the number of Middle Archaic sites in the Coastal Plain drops appreciably from the Early Archaic, and coincides with the spread of pine forests and xeric conditions, archaeologists have suggested that decreased use of the Coastal Plain may be explained by a change in resource structure (Elliott and Sassaman 1995).

In fact, the relative paucity of Middle Archaic sites in the Coastal Plain has largely been blamed on resource impoverishment. It has been argued that the warming trend noted during the mid-Holocene and the widespread emergence of pine forests in the Coastal Plain may have made this province less attractive for settlement when compared to the forest structure of hardwoods and softwoods during the Early Archaic. Considering data from the Coastal Plain of Florida, Anderson (1996:165) points out that explanations based on change in forest structure are insufficient in accounting for the shift in settlement strategies. In Florida, pine also replaces early oak forests, but here an appreciable number of archaeological sites dating to the Middle Archaic still persist. There is also the problem of site identification in the lower coastal plain and areas along the former coastline. These sites have either since been submerged as global sea levels rose in the early portion of the late Holocene, or have since been eroded as the shoreline retreated over archaeological deposits.

Kowalewski (1995:162-165) offers alternative explanations for the lack of Middle Archaic sites in the interior Coastal Plain. One suggestion is that sites dating to the Middle Archaic are not getting recorded as such because we are currently not able to identify the correct diagnostic projectile point types (compare with the Middle Archaic-Late Archaic [MALA] point type discussed by Sassaman et al. 1990:153). It is also possible that tools that were stylistically diagnostic of this cultural phase were produced on wood or bone materials that failed to be preserved in open-air sites, and the use of lithic raw materials may have been restricted to more sparingly-used or less-formalized and expedient tools. There is also the possibility that we are encountering more sites in the Piedmont as compared to the Coastal Plain simply because historic period soil erosion in the Piedmont has contributed to higher site visibility. In other words, the Coastal Plain may have been similarly occupied, but these sites may be deeply buried under alluvial sediment and are unfortunately going undetected using current survey techniques (i.e., shovel testing). The possibility of burial of sites in the Coastal Plain is supported by the fact that the rivers draining the Atlantic Slope had much greater sediment loads prior to the modern construction of reservoirs for hydro-electric power generation (Meade and Trimble 1974).

5.3 EXPLAINING AND MODELING SETTLEMENT PATTERNS

As with the preceding Early Archaic, there has been a tendency to explain Middle Archaic settlement and mobility as an ecological adaptation. Changes in cultural processes are seen as being oriented toward changing environmental and climatic conditions, in the case of the Middle Archaic, those brought on with mid-Holocene warming. But as Sassaman and Anderson (1996:1) have stressed, the relationship between human societies and their environments is often more complicated than may first appear, and alterations in environmental conditions do not always coincide with cultural changes.

Several Middle Archaic settlement models have been proposed for the South Atlantic Slope, beginning with Caldwell's (1958) 'Primary Forest Efficiency' model. Caldwell hypothesized that over time, seasonal rounds developed to become increasingly well-adapted subsistence strategies, allowing for the exploitation of the most productive resources at the best times of the year. Under such a scenario, groups would have moved into the upland regions during the fall season to harvest abundant forest mast and hunt the deer feeding upon it; during the late winter and early spring, these groups would move to the floodplains to take advantage of the anadromous fish runs in major river systems. An efficient mobility pattern may eventually lead to population growth, relative settlement permanence with well-defined territories, and the beginnings of socioeconomic differentiation. Caldwell proposed this model before most large-scale excavation and survey investigations in the Piedmont, and it is now clear that the archaeological data does not support Caldwell's expectations.

Aside from empirical challenges, there have also been theoretical challenges to Caldwell's model. For instance, Cleland (1976) argues that cultural subsistence adaptations occur along a continuum from focal, or highly localized, to diffuse, or generalized, strategies. Focal adaptations are centered on a few resources and tend to be highly specialized, while diffuse adaptations focus on a wide variety of different resources. Over time, there may be a shift between these two extremes, likely in response to changes in the resource distribution, climate, and social conditions. Most importantly, there is no directionality to these strategies, or evidence for one strategy evolving from the other.

Based on the empirical observation of large, dense sites situated along major rivers and smaller, diffused lithic scatters across the uplands of the Piedmont, House and Ballenger (1976) developed a riverine/inter-riverine settlement model for the Piedmont Middle Archaic. This model proposed a logistically-oriented settlement-mobility system. According to their model, the riverine zone included the larger rivers of the Piedmont, while smaller rivers and streams were categorically placed in the inter-riverine zone. Following Strahler (1964), House and Ballenger argued that streams ranked 3 or higher would have more abundant resources than lower ranked streams of the upland regions, providing a diverse faunal resource base that included turtle, fish, raccoon, and opossum.

In the inter-riverine zone, deer and nuts could be exploited most efficiently in upland areas where first and second ranked streams were present. Following Binford and Binford (1966), House and Ballenger (1976) developed a lithic tool classification scheme that divided their sites into habitations (or maintenance) and extraction sites. Based on the differences in the seasonal availability of resources in riverine and inter-riverine zones, they (House and Ballenger 1976:117) argued that during the spring and summer, residences were concentrated along major rivers, and during the early fall, groups would move to seasonal base comps in upland creek valleys where they could exploit deer and hardwood forest resources. After deer hunting season ended and the acorn mast was depleted, these groups would return to more permanent structures in the riverine zone and remain there for much of the winter season.

Archaeological investigations in the inter-riverine zone have largely confirmed the expectation that sites in the uplands would include small, diffuse, lithic scatters indicative of short-term extraction functions. Goodyear and colleagues (1979), for instance, tested the model by examining functional variability among sites in diverse microenvironments within the inter-riverine zone. Their main line of evidence came from an analysis of inter-site variability in lithic assemblages of locales identified during a survey of the Laurens-Anderson corridor. The goal was to distinguish between long-term and short-term camps. What they found was early stage reduction flakes co-occurred more frequently than they occurred with late stage reduction flakes, suggesting some late-stage biface reduction may have taken place away from the base camps (Goodyear et al. 1979:162). Also, a weak correlation between curated tools (bifaces) and early-stage reduction flakes implied that many tools were transported and discarded away from their locations of manufacture. Together, this suggested a transient use of the Piedmont, and a functional dichotomy between extraction sites and seasonal base camps within the inter-riverine zone.

Excavations at the Windy Ridge site produced results question the applicability of the of the riverine/inter-riverine model to all phases of the Middle Archaic. Given its upland association, House and Wogaman (1978) expected the site to be a short-term extraction camp that was used by groups inhabiting a postulated nearby seasonal base camp. Although assemblage diversity was low (supporting the hypothesis that this was an extraction site), there was a high density of Morrow Mountain debris spatially correlated with discarded Morrow Mountain points and debitage. This suggested to House and Wogaman that Windy Ridge may have been a habitation site, not an extraction camp. Such a short-term upland habitation site had not originally been predicted by the riverine/inter-riverine settlement model.

Additional challenges to the riverine/ inter-riverine model came from research conducted prior to the construction of the Richard B. Russell Reservoir on the Savannah River (Anderson and Schuldenrein 1985; Tippitt and Marquardt 1984). Sites in this river valley yielded Morrow Mountain assemblages that were not significantly denser or more diverse than those recovered from upland environments, and archaeologists found little evidence for residential camps as predicted by the model. The lack of inter-zone assemblage variability suggested Middle Archaic groups may not have as strongly differentiated between the riverine and inter-riverine zones, an assertion that was further bolstered by the demonstration that mid-Holocene biotic communities and resource availability in major river valleys were not significantly different from the other regions of the Piedmont (see Ward 1983).

Sassaman (1983, 1991; also see Sassaman and Anderson 1994:139) put forward an alternative model, one that characterized Middle Archaic foragers of the Piedmont by a much higher level of residential mobility than was previously acknowledged. Instead of seasonal movements between the riverine and inter-riverine zones of the Piedmont, Middle Archaic populations were proposed to have moved residences every few weeks, returning to select sites occasionally, but exhibiting little apparent selectivity in the location of habitations. Following Binford (1980), Sassaman argued that a high mobility foraging strategy suited the largely homogenous resource structure of the Piedmont. Frequent movement also furnished these societies with a high degree of social flexibility, where individuals and households were free to pick themselves up and reconfigure into in co-resident communities as need dictated (see Sassaman 1991).

Cable's (1982) technological organization model bears a strong resemblance to Sassaman's high mobility model, and has been useful for its ability to explicitly link changes in tool technology and design to mobility strategies (also see Cable 1996). For instance, according to his model, a high degree of mobility would have placed a constraint on the amount of material culture that was transported by these groups (although exactly how foods that were seasonally processed in larger quantities [e.g., nut oil] were transported or stored for later use, remains unexplained). According to Cable, a mobility strategy characterized by frequent residential moves may have alleviated the need for elaborate or specialized tools commonly observed in forager societies practicing more collector-oriented settlement strategies. Perhaps given the ubiquity of quartz raw material in the Piedmont region, tools could be produced and/or replaced as needed, and appear to have been made expediently and in more generalized or in more 'multipurpose' forms (e.g., Morrow Mountain projectile points). Frequent residential moves may have also resulted in the rapid turnover of such tools, and hence a high rate of discard of lithic artifacts diagnostic of the Middle Archaic period.

Sassaman has also proposed that high mobility and flexible movement resulted in a record of redundancy between sites (e.g., Sassaman 1991; also see Blanton and Sassaman 1989). However, the reverse argument could also be made: it is precisely because of social flexibility that we would expect to find evidence for variability in the group size and composition for individual Middle Archaic occupations.

If we accept resource structure changed during the mid-Holocene, Sassaman (1991) points out that Binford's (1980) model can also account for the settlement and mobility strategies in the Coastal Plain. The expansion of southern pine at the expense of mast-producing species of oak and hickory (Delcourt and Delcourt 1987) and the prevalence of moist conditions (Watts et al. 1996), may have resulted in the development of a more heterogeneous resource structure in the Coastal Plain during the mid-Holocene. Human exploitation of such a patchy environment may have called for a more logistically-organized mobility strategy than that employed in the Piedmont. Sassaman and his colleagues (1988) have also suggested that during the mid-Holocene, foraging ranges that previously were oriented along drainage systems that included both the Coastal Plain and Piedmont regions (see Anderson and Hanson 1988) were now split along the Fall Line.

As foraging territories become smaller, inter-riverine regions began to be exploited to a greater extent than in previous periods. Aspects of this model require additional evaluation against archaeological data; for instance, is there evidence of stronger territoriality than before, or do we see the occasional use of neighboring ranges? Lithic debitage and tools of Coastal Plain chert are regularly encountered in artifact assemblages of Middle Archaic sites in the Piedmont, but more research is needed to determine if these non-local materials were acquired directly or through trade, or if the presence of these objects were perhaps the residues of groups inhabiting the Coastal Plain but making occasional (either seasonally or every few years) forays into neighboring territories.

5.4 MATERIAL CULTURE

When using material culture to interpret site function and use, it is important to keep in mind the varying factors affecting their preservation and the role that excavation strategies play in their recovery. For instance, soil and climatic conditions in the Southeast are not favorable for the preservation of perishable material culture, and in the case of the archaeological residues of highly mobile hunter-gathers, we may not expect to recover evidence of temporary structures or cooking pits and hearths that were used over short periods of time.

Although there are few occurrences recorded in Georgia, it is very likely that perishable artifacts, such as wooden tools, textiles, and basketry, made up more than 90% of the material culture assemblage throughout the Archaic Period. In 1932, the Smithsonian Institution salvaged a wooden dugout canoe from Cumberland Island that appears to have dated to the Archaic Period (Stelzer 1932). The complex textiles from the Windover Site in Florida (Doran 2002; Andrews et al. 2002), which date as far back as 8000 BP, indicate that even Early Archaic people had a very well developed ability to weave intricate fabrics from local plant materials. Much later, during the Woodland Period, fabric-impressed ceramics indicate an established weaving heritage. Much of what remains from the open-air habitations of Middle Archaic groups on the South Atlantic Slope are lithic artifacts, predominantly tools and residues resulting from the flaking of stone masses and/or objects, but also stone items produced or modified by grinding.

As mentioned previously, three projectile point/knife types dominate the Middle Archaic period (Coe 1964:35-43). These point types include Stanly (triangular blade point with narrow, straight-sided, vertical stem), Morrow Mountain (isosceles triangle blade with contracting stem), and Guilford (lanceolate point with the widest point near the center). While quartz began to be widely used throughout the rest of Georgia, chert continued to be used in the Coastal Plain due to its local availability (Stanyard n.d.), especially in the Flint River valley. Also, Sassaman has identified small, stemmed/notched lanceolate bifaces in stratigraphic contexts at sites in the middle and upper Coastal Plain (Sassaman 1991:37), between strata containing Morrow Mountain and Late Archaic Savannah River Stemmed points. He has labeled these points Middle Archaic-Late Archaic, or MALA for short. Other artifacts characteristic of this period are ground and polished stone tools, including atlatl weights, nutting stones, grinding stones and pestles, and netsinkers (Ford and Willey 1941:333; Griffin 1967:178; Stoltman 1978:715; White 1988:53).

Archaeologists have been able to gain considerable insight into Middle Archaic societies by studying how lithic raw materials were procured and selected, how procurement strategies changed over time, how tool production and lithic reduction techniques were organized, and how tools and raw materials were curated and discarded. Blanton (1983, 1984), for instance, studied Morrow Mountain raw material availability and preferences in the Piedmont, Fall Zone, and Coastal Plain regions of South Carolina. He provided a detailed description of the geological distribution of lithic resources in these regions, including the abundance of vein quartz and metavolcanic rocks such as rhyolite and argillite in the Piedmont and marine chert in the Coastal Plain. Blanton discussed evidence demonstrating how raw material procurement strategies had become increasingly localized over time, such that by the Middle Archaic, lithic assemblages contained minimal amounts or no non-local raw materials. He also noted that in the Piedmont region, tools were not curated and showed signs of expedient manufacture.

When present, non-local materials point to regional scale processes. Exotic tools or raw materials can be acquired directly through socially-established access to resources in the home range of neighboring groups, or indirectly through trade and social exchange. If Middle Archaic territories shrank over time, we need to ask how even minimal amounts of non-local raw materials entered the Piedmont archaeological record. As discussed in Chapter 7.0, such issues may be better approached through more detailed analyses of the residues resulting from temporally discrete occupations, rather than through the more broad comparisons of inter-site assemblage variability.

Increased reliance on locally available quartz materials during the Middle Archaic has been contrasted with the preference for non-local cryptocrystalline materials during the Early and Late Archaic sub-periods, and has been used to argue for changes in settlement strategies over time. Tippitt and Marquardt (1984) note that at the Gregg Shoals site in Elbert County, Georgia, there is a notable use of non-local cryptocrystalline materials in the Early Archaic and a greater use of non-quartz local material during the Late Archaic. They have used this to argue a shift from logistic mobility during the Early Archaic to high residential mobility during the Middle Archaic, and again to high logistic mobility in the Late Archaic.

Some have explained the decreased foraging range and greater reliance on local raw materials during the Middle Archaic as resulting from constraints on mobility. Sassaman and colleagues (1988:87-88) argue for the establishment of two distinct band ranges during this period, one focused within the Piedmont and the second within the Coastal Plain. This "decreased" linear range of bands (see model of Early Archaic band range in Anderson and Hanson 1988) may have encouraged bands to begin making more use of inter-riverine zones and moving into areas somewhat removed from the major river valleys.

Frequent residential moves may have also encouraged the shift to a more generalized, or all-purpose, expedient tool kit, and may explain why Middle Archaic populations of the South Atlantic Slope lacked specialized tools more characteristic of earlier and later cultures. Based on ethnoarchaeological research among the Nunamuit Eskimos, Binford (1983) has demonstrated the extent to which mobility can impact lithic technology, including the raw materials that are selected for tool use, diversity in the tool kit, tool use-life, retooling, and tool design. As Amick and Carr (1996) note, such middle range theories have been important in relating human cultural behavior, including economic and social practices, to the organization of technology and ultimately archaeological patterns of artifact form, use, and discard. Cable's research (Claggett and Cable 1982; Cable 1992, 1996) exemplifies the utility of an organizational approach to lithic technology in the study of Middle Archaic populations. Using this framework has been able to demonstrate a shift from logistic mobility and curated technology during the Early Archaic to residential mobility and expedient technology during the Middle Archaic in the North Carolina Piedmont.

Thus far, studies of lithic technological organization have focused on relationships with mobility, but additional issues relating to lithic tool production and discard call for further exploration. For instance, we have yet to understand the technological choices made by Middle Archaic tool manufacturers, including the selective use of heat treatment in altering flaking properties and the resulting stone tools. Moreover, as Jones (2006) recently pointed out, an increased reliance on Piedmont quartz may be a more complicated issue than simply one of reduced foraging range. There is an assumption that quartz, a macrocrystalline form of silica, was a less desired material for tool production than, say, Coastal Plain chert. While this may largely be true, quartz occurs in a range of qualities, with the more glassy forms having obsidian-like properties. Lithic reduction strategies in the Piedmont may have been oriented towards selecting for the glass-like material, but even when proposing such selection processes we need to keep in mind the intended uses of tools. For instance, Jones (2006) points out that glassier quartz may have been desired for the production of sharp-edged projectile points, but sharpness may not always have been a desired quality (for some tasks, such as sawing or grinding, a sharp edge may generate undesired heat).Which grades were chosen for which functions is an issue that still needs to be examined.

Quartz also comes in a relatively small package size, and while often found in large chunks, pieces typically contain multiple factures; when reduced down to their constituent pieces the actual size of the raw material is rather small (Jones 2006:29). Moreover, while it may true that quartz is a ubiquitous material, the 'better' (i.e., glassier) grades are not. Lithic materials discarded in the largest quantities may have been the less desired grades of quartz, with the more glassy varieties showing a higher degree of curation and tool exhaustion. Future Middle Archaic research in Georgia needs to be designed to test such hypotheses.

Other than moveable artifacts, these groups may have also created material culture that was left behind as evidence of occupation. These include built structures for shelter, pits for food storage, and hearths for cooking. These 'features' of the archaeological site are subjected to the same kind of post-depositional processes favoring or adversely affecting preservation and recovery as those for artifacts. Sassaman and Ledbetter (1996) discuss the types of built structures that may be used in the Lower Piedmont region in their regional overview of architecture during the Middle and Late Archaic period, and more recently Crook (2007) explored evidence in support of pile houses for the coastal zone. If shelters were erected, they were probably of insubstantial construction and of a temporary nature. At present, there is no evidence of long-term habitation sites in Middle Archaic Georgia.

While direct evidence for architecture has been difficult to recover in the South Atlantic Slope, indirect evidence may be derived through the analysis of spatial dimensions of discard behavior (Cantley and Cable 2002: Chapter 8). As more horizontal excavation strategies are employed in the future, it may be possible to examine how space was used to mediate social interactions during the Middle Archaic, whether through the construction of built structures or even through the less formalized spatial organization of activities at a locale. Variability in spatial dimensions of economic and social activities documented for individual Middle Archaic occupations may point to changes in group composition and size.

5.5 SUBSISTENCE PATTERNS

This is one area of Middle Archaic research that has traditionally received little research attention and where much remains to be understood. As Sassaman and Anderson (1996:97-98) note, this stems in part from the relatively small datasets of faunal and floral remains preserved and recovered from sites in the South Atlantic Slope, and the assumed limited datasets based on the lack of visible archaeological features. This also stems from a research bias that places more importance on issues relating to domestication, a process that we do not see underway in the study region until after the transition to the Late Archaic period.

It is generally assumed that Middle Archaic subsistence patterns were broad spectrum (Caldwell 1958), and that plant collection strategies were largely unchanged from those employed during the Early Archaic. Gremillion (1996) notes, however, that although there was some continuity between the Early and Middle Archaic periods, particularly in the exploitation of hickory nuts, it is important that we examine variability in exploitation strategies over time and space. Archaeological studies need to integrate insights into changes in technology, mobility strategies, and storage, and examine subsistence strategies in the context of these cultural changes to increase understanding of the roots of later domestication processes. More research also needs to be conducted on the relationships between climatic instability, variations in resource availability, and food procurement strategies. Furthermore, if subsistence patterns had largely gone unchanged from the Early Archaic, we need to ask what supported this stability in spite of the environmental changes taking place during the mid-Holocene. That is, "stability cannot simply be written off as a case of cultural inertia but must be evaluated in terms of the costs and benefits of different subsistence behaviors in a given environment" (Gremillion 1996:100).

As far as explaining the early steps towards domestication, Bruce Smith (1992) has argued that slow-moving aquatic habitats during the hypisthermal attracted humans to bottomland locations. In his "floodplain weed hypothesis" he proposes that repeated occupation of frequented bottomland locations resulted in the disturbance of the existing natural vegetation, and in these disturbed environments, conditions favorable for the colonization of weedy species such as chenopod, sumpweed/ marshelder, and sunflower were created. Over time, these "weeds" eventually came to be preferred for human consumption, and were managed by prehistoric groups, setting the stage for later domestication of these plants. Smith's model has largely been supported by archaeological evidence from central and southern Illinois, as well as other regions west of the Appalachian Mountains, but as Gremillion (1996:103) argues may not explain domestication in regions that were relatively less impacted by the hypisthermal, including the South Atlantic Slope.

Recent climatic research (discussed in Chapter 2.0 of this report), has suggested that microenvironments (i.e., floodplains and bottomlands) in the Piedmont and North Georgia Mountains were impacted by climatic instability brought on by summer thunderstorms and occasional heavy rainfall during the mid-Holocene. If the availability of mast resources has been impacted negatively, what did this mean for the subsistence patterns of Middle Archaic populations, and how could these changes have factored into later domestication processes?

When it comes to studying the exploitation of mast resources, to what extent did different species contribute to the human diet? Hickory is often the most abundant nutshell recovered from Middle Archaic archaeobotanical assemblages, but this may be partly due to differential preservation and recovery factors. Gremillion (1996:104) notes that prehistoric exploitation of thinned-shell and fragile nuts such as acorn may be under-represented in water-screened samples (thick-shelled nuts are more prominent and tend to be recovered more easily). More research also needs to be conducted on the contribution of different nuts to the human diet, studies that need to consider the nutshell-to-meat ratios in order to normalize quantities for comparative purposes. We also need to consider the possibility of different cooking techniques, and how they may have impacted which nut species had shell remains that were carbonized or processed in ways where the shell was left in large enough pieces to be recovered using modern excavation techniques.

It would be useful to learn more about seasonal variation in Middle Archaic subsistence strategies. The generalized foraging adaptations of Middle Archaic populations inhabiting the Piedmont has often been contrasted with the seasonal transhumance between upland and riverine or floodplain environments noted in other regions of the Southeast (e.g., Sassaman 2001b:318). A lack of seasonal variation in settlement strategies does not imply a lack of seasonal variation in the foods that were exploited. Even if no seasonally-specific environments were utilized or preferred, the subsistence strategies of these populations likely shifted as different food resources became available and/or more abundant through the year. In other words, we may find that among the several temporally-discrete Middle Archaic occupations represented at a single archaeological site, there may be some variability in the types of food resources that were processed and consumed.

However, because of a bias toward collecting only those soils samples from features for archaeobotanical analysis, we have yet to begin building a systematically-collected database of the floral assemblage from Middle Archaic sites. Because Middle Archaic occupations on the South Atlantic Slope were short-term habitations, we should not expect to encounter the same kind of cultural features we would for later periods. A more fruitful approach, therefore, is to take soil samples from close-interval shovel tests; this would not only allow us to examine non-feature contexts for floral remains, but when compared with the spatial distribution of artifact concentrations, we may be able to correlate archaeobotanical assemblages with spatially and temporally discrete occupations. The same techniques may also be applied to the collection of faunal remains, particularly micro-remains. We must recognize that research conducted in the South Atlantic Slope to date has yet to demonstrate any potential for the preservation for bone at Middle Archaic sites.

For instance, one important lesson learned from excavations at 9HY321 (Shah et al. 2008) was the potential for subsistence information that could be obtained from non-feature soil samples. In the future we suggest systematic and comprehensive collection of soil samples from non-feature contexts for flotation processing and archaeobotanical analysis (see Pearsall 2000 and Lennstrom and Hastorf 1995). This kind of information may allow us to examine spatial patterns in the distribution of paleobotanical remains, and perhaps even examine their correspondences to spatially distinct occupations, allowing us to examine the relationship between seasonality and occupational variability.

5.6 SOCIAL ORGANIZATION, EXCHANGE, AND TERRITORIALITY

Griffin (1952:354-355) offered an initial characterization of social organization among Archaic populations in the Southeast, describing them as small, exogamous, probably patrilineal and patrilocal, egalitarian bands that inhabited spatially defined hunting territories with seasonal movements linked to resource procurement and ceremonial gatherings. Anderson and Hanson (1988) largely accept this description in their model of Early Archaic band-macroband aggregation and dispersal along the South Atlantic Slope drainages. Sassaman offers a slightly different depiction of Middle Archaic populations in this same region, however, describing them as having an open social network, flexible co-resident rules, and bilateral descent (Sassaman 1991:31; also see 2002:321). These were largely egalitarian societies (Sassaman 2005; 2001), and more generalized and highly mobile foragers (in contrast to Shell Mound Archaic societies that were sedentary for at least part of the year and were characterized by more complex social organization (Claassen 1996).

Based on analogies with ethnographically-documented foraging societies, the basic unit of social organization among Middle Archaic populations in the South Atlantic Slope was likely the nuclear household, and periodically, communities of several households may have aggregated for purposes of ritual, marriage, or alliance building. The dispersal and aggregation of individuals and families is certainly a topic worth additional attention, particularly in relation to studies of variability in co-resident group size and the gendered divisions of labor. As more data is collected, we may be able to answer questions such as: was fluidity in social composition more prevalent during some seasons, and, how did the organization of economic activities support or hinder the ability of families and individuals to reconfigure themselves into different social formations?

It is also helpful to understand how social interaction played at different levels, including at the level of the local co-resident community and the level of inter-regional relations. For instance, it has been suggested that increase in populations during the Middle Archaic may have led to band territories becoming smaller and more tightly packed (Steponaitis 1986: 372), and that as the linear range of foraging territories decreased, distinct band ranges appeared in different physiographic regions (Sassaman et al. 1988). If raw material and food sources were differently distributed between these regions, how did social relationships between foraging groups evolve to support the distribution of these resources? Were the boundary areas between these groups well defended, and was access to resources in the home ranges of neighboring groups restricted? If resources were moved through exchange rather than direct acquisition, how formalized were these exchange relationships? Moreover, what were the key social (language, culture or kinship) and spatial (distance from a point or boundary maintenance) relationships that determined access to resources and strongly or weakly established property rights? Could minimal degrees of territoriality have contributed to flexibility in group composition and mobility, or was the opposite true, with high frequency residential moves serving as a means of defending resource rights?

There is a general assumption that regional exchange networks and alliances emerged in response to decreased mobility or increasingly restricted foraging ranges (Sassaman et al. 1988). However, there is a possibility that quite the opposite trend may also be true, that mobility was actually a strategy to maintain exchange networks, and that groups moved frequently in an effort to maintain informational networks (Whallon 2006). Such social relations may have been critical to surviving in environments with variable resource availability, and social relations created and maintained through exchange may have supported conflict-free access to resources outside of a group's home range.

5.7 RITUAL AND MORTUARY PRACTICES

There is little information currently known about Archaic Period mortuary patterns in Georgia. The lack of detailed excavations in areas with well preserved human remains from that time frame is readily evident. However, there are several examples of typical contexts within which human remains are occasionally recovered in Georgia, that date to some portion of the Archaic Period. Primarily in the Piedmont (but also in other contexts) rock mound sites are identified. Most rock mounds are isolated or clustered in small numbers and are not dateable. Many are probably Historic Period field clearings, and a few are Native American, and are typically thought to be isolated burials (though only a few have been excavated). Another Archaic mortuary pattern is found on shell ring or shell midden sites along the coast. Here human remains are often found scattered throughout the midden itself (Marrinan 1976; DePratter 1979; Depratter and Howard 1980). We do not have a good understanding of the nature of burial or the degree of ceremonialism attendant in these situations, and it is clearly a topic for further research.

A better example of Early to Middle Archaic mortuary patterns in the Southeast comes once again from the Early/Middle Archaic Windover Site in Florida (Doran 2002). There more than 100 graves were identified, with at least 37 in sufficiently preserved condition that their method of burial could be interpreted. At Windover, it appears that individuals were submerged within the waters of a shallow lake; typically on their left side and with their head to the west. They were placed on the bottom of the lake with a fabric over them and pinned by rope/cordage tied to wooden stakes (Doran 2002; Andrews et al. 2002). Grave goods such as lithic tools and other items were placed alongside the dead, with a disproportionate number amongst children. Over time, the lake began to fill with peat, and the anaerobic environment preserved the fabrics, wood, bone, and brain tissue for thousands of years.

Though the Windover Site is clearly not typical of Archaic Period mortuary patterns, it does indicate that great care was taken with the dead and there appears to have been some level of ceremonialism associated with burial and the afterlife. There may have been differential access to exotic goods and a passing of material wealth to the dead during a time frame much earlier than we might have anticipated otherwise. There is still a great deal of research which could be carried out to understand Archaic Period practices regarding disposal of the dead.

6.0 MIDDLE ARCHAIC GIS ANALYSES

Aside from the more generalized distributional studies conducted on the Archaic database at the onset of this report, we carried out more detailed spatial analyses of the Middle Archaic dataset using a Geographic Information System (*ArcGIS*). The studies are exploratory in nature and were intended to examine specific questions regarding the nature of Middle Archaic settlement patterns.

The dataset was derived from the Georgia Archaeological Site Files (GASF), accessed in October 2007, and includes 2,586 recorded Middle Archaic components. Eighteen Middle Archaic sites were not designated with Universal Transverse Mercator (UTM) coordinates and had to be excluded from the analysis. Of the sites included, 695 were single component Middle Archaic sites, of which 35 were considered eligible for listing in the National Register of Historic Places (NRHP). The remaining 1,891 Middle Archaic resources occurred within multiple component sites, 249 of which were considered NRHP-eligible. These Middle Archaic components were compared with the site information data from all other time periods in the following series of analyses.

ArcGIS Spatial Statistics toolbox was used to conduct all statistical analyses. Spatial statistics differ from traditional statistics in that space and spatial relationships are an integral and implicit component of their mathematics. The tools in the Spatial Statistics toolbox demonstrate a variety of statistical operations appropriate for analyzing geographic data. Additional information about these tools and statistical analysis of geographic data in general, may be found in *The ESRI Guide to GIS Analysis: Volume 2: Spatial Measurements and Statistics* (Mitchell 1999).

6.1 AVERAGE NEAREST NEIGHBOR ANALYSIS

To assess the degree to which Middle Archaic sites clustered in comparison with sites from other periods, the GASF database was first geo-referenced, then categorized by temporal designation, and finally evaluated in a nearest neighbor analysis. The Average Nearest Neighbor Analysis is a function of measuring the distance between each site and its closest neighbor. Here, efforts were taken to include only components of the same temporal designation for analysis. All of the nearest neighbor values were averaged for each temporal dataset. Each value was compared to an average value generated from a hypothetical random dataset (calculated by knowing the total area and using the same or similar number of randomly distributed points). The clustering ratio (Moran's I-value) is determined by dividing the observed average distance by the expected (i.e., random) average distance. If that value is less than one (1), then clustering is present; values greater than 1 indicate dispersion. The Z-score is calculated to find out if the observed trend is significant. The analysis assumes no barriers and that all instances are independent.

Although we would assume that archaeological sites are not the same as random observations, and it has been made clear that archaeological sites are auto-correlated time-series dependent observations (see Whitley 2004a), we would expect a comparison of Average Nearest Neighbor distances for temporal periods to show some interesting trends. First, we would expect that intensive use of a wide variety of habitats would tend to produce a more dispersed distribution of sites (as the remnants of resource acquisition, use, and wide-ranging activities). We would also expect that limited habitat usage and repeated use of the same habitats would tend to create a more clustered appearance (hence a smaller average nearest neighbor distance). Therefore, we would conventionally make the assumption that Archaic sites (with their presumed more intensive use of a wide variety of habitats) would tend to have higher average nearest neighbor distance values, and a Moran's I value closer to or even greater than 1. Conversely we would expect Woodland through Mississippian sites to cluster more tightly along major waterways (with their increasing reliance on more restricted horticultural and agricultural habitats). Their average nearest neighbor distance values should be low, and their Moran's I value less than 1 (and it should be close to 0).

However, there are some major caveats to understanding the distribution of archaeological sites from a dataset such as the GASF. First, and perhaps most important, we do not have data relating to the areas of survey (nor the methods of survey within those areas). Without an understanding of where survey was conducted and sites found to be absent, our analysis has to assume that no particular temporal period is more likely to be defined over any other when sites are identified. This is a very tenuous assumption though, principally because some temporal periods have many diagnostic artifacts while others have very few. As we have seen the Middle Archaic has perhaps the fewest temporal markers of any period (probably excluding the Early Paleoindian); with Morrow Mountain projectile points representing almost 93% of all Middle Archaic diagnostics currently recorded in Georgia. This strongly suggests that there may be many Middle Archaic components which go unrecorded as such because of the absence of diagnostics (Morrow Mountain points in particular). This may tend to increase the observed average nearest neighbor distance.

Secondly, the highly localized limitations of survey tracts and corridors insure that site clustering for all periods is likely to be high (except for those periods which have very few examples anyway – such as Early Paleoindian) when compared to a random distribution. So, the focus of the analysis is toward finding small differences in values which always indicate high clustering. This is problematic in that it makes observing those values all the more difficult, and their significance somewhat decreased when they are observed. Interpretation of those minor differences may also be overblown into inappropriate hypotheses of settlement beyond what they truly indicate.

From a behavioral perspective, another problem with the GASF dataset is the inability to discern the nature of the occupation; especially in multi-component sites. Often multiple site types are defined for multiple temporal periods, but survey and testing level information recorded on GASF site forms is usually insufficient to determine which site type goes with which temporal occupation, or even if the recorded site type is accurate at all. Generic site types such as “lithic scatter” do not sufficiently convey an understanding of what activities occurred in the past that resulted in the deposition of the materials. Lumping together the remnants of different activities merely because they have the same temporal markers may lead to an oversimplification of observable trends.

This becomes particularly important when we consider that certain activities are more or less likely to result in the deposition of artifacts than others. For example, resource collection may have been the most common activity to occur during the Middle Archaic, but it may have only rarely resulted in the deposition of a large quantity of non-perishable artifacts (e.g., quarrying). More typically, a discarded tool or point may have been the only remnant left behind of a resource collection activity. Such isolated finds are typically not found while shovel testing at 30-meter (90-ft.) intervals, nor are they recorded as site locales when they are found (thus they are discarded as unimportant). Consequently, some kinds of activities may be over-represented and others under.

The results of the Average Nearest Neighbor Analysis were essentially inconclusive with respect to the Middle Archaic (Table 6.1). There tends to be a slight trend toward higher clustering among later period sites (with Historic non-Indian sites displaying the most), but there is nothing to indicate a specific shift during the Middle Archaic period either toward or away from site clustering. The NN Ratio for the Middle Archaic (0.38) falls in the middle of all of the observed values (Figure 6.1). Though the Middle Archaic value does indicate a slight shift toward more clustering than either the Early or Late Archaic periods, it is likely attributable to a wide variety of variables and cannot be seen as definitively the result of a settlement choice; such as habitat limitations.

Table 6.1 Average Nearest Neighbor Analysis.

Period	**NNRatio**	**NNZscore**	**Significance**	**Sample size**
Paleoindian				
Early Paleoindian	0.94	-0.63	0.00 Random	33
Late Paleoindian	0.57	-10.76	< 0.01 clustered	171
Archaic				
Early Archaic	0.46	-44.12	< 0.01 clustered	1812
Middle Archaic	0.38	-60.31	< 0.01 clustered	2604
Late Archaic	0.41	-68.09	< 0.01 clustered	3634
Woodland				
Early Woodland	0.42	-40.07	< 0.01 clustered	1340
Middle Woodland	0.32	-70.37	< 0.01 clustered	3006
Late Woodland	0.36	-52.25	< 0.01 clustered	1844
Mississippian				
Early Mississippian	0.44	-27.26	< 0.01 clustered	655
Middle Mississippian	0.38	-30.63	< 0.01 clustered	691
Late Mississippian	0.25	-86.67	< 0.01 clustered	3715
Historic				
Historic Indian	0.31	-46.52	< 0.01 clustered	1243
Historic non-Indian	0.16	-275.27	< 0.01 clustered	29581

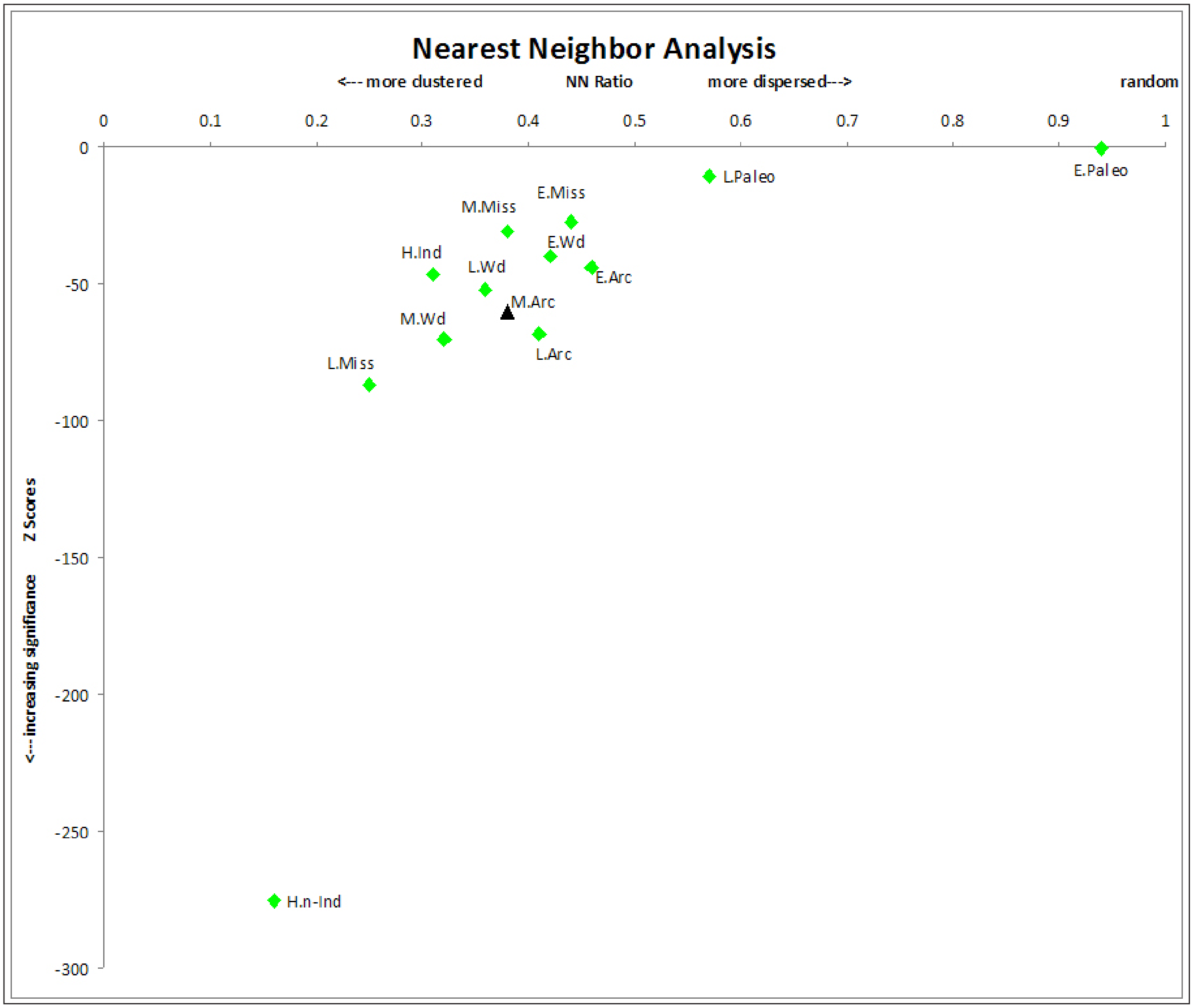


Figure 6.1 Distribution and significance of site clustering for individual cultural periods.

6.2 SITE DISTANCES TO PHYSIOGRAPHIC BOUNDARIES

Although related to the distribution of site in general, another area of analysis that was explored was the relationship between sites of different temporal periods and their distance from defined physiographic boundaries. This was not an analysis of clustering per se, but observation of the trends toward or away from the edges of physiographic regions. Hypothetically, we might expect to see the edges of physiographic regions act as territorial boundaries, or conversely as transitional areas that facilitate trade between regions. Territoriality is a complex concept which can be manifest in the physical and archaeological record in different ways. The two primary means of defining cultural territories can be conceptualized as polygon and point-field concepts (see Whitley 2004b for more detail).

Our traditional Western concept of property ownership is essentially territoriality on a polygon basis; we own tracts of land. Property either does or does not belong to an individual or group. This is a straightforward yes-no duality. Though there may be buffered boundaries, association with a group (or individual) is simple and defined by a linear marker or barrier. The point-field concept, originally defined in the context of linguistic terminology (Lehman 1980; Bennardo and Lehman 1992), can be defined as a 'fuzzy' association based on distance from a central point. Affiliation, or ownership, decreases with distance (or cost-distance) from that central location or site. Thus, boundary areas are not linear borders, but areas of no or little affiliation (a no-man's land so to speak).

The point-field is an altogether different, and perhaps more complicated concept than the polygon territory. We would expect that point-field territoriality would exist in cultures that have a strong centralized political authority, and potentially that have few external conflicts (and hence less of a need to physically define territory). Strong trading relationships may exist, but there would be less of a tendency to place communities (even trading ones) along physical or otherwise defined boundaries. Instead, they are more likely to be clustered toward the center of the territory closer to their source of political and social power. In 'simpler' societies, we would expect the political and social base to be more strongly familial, and a good corollary would be the hunter-gatherer base camp concept. Base camps form the centralized point in the point-field territory, while hunting camps are activities dispersed throughout the field.

In cultural groups with a strong trend toward polygon-defined territories we would expect to see greater external conflict, and more dispersed communities within the territory with perhaps less centralized authority; or perhaps a well-defined hierarchy of communities which extend military and political authority throughout. There may also be a strong trend of placing communities (especially trading or military ones) near the edges of that territory. Polygon boundaries are more likely to exist in heterogeneous terrain, where obvious barriers to movement are easily defined and defended.

Our exploratory analysis of the distance to physiographic boundaries began once again with the geo-referencing of the GASF database, and classification into temporal periods. The existing physiographic provinces polygons for Georgia were transformed into polylines. The state boundary was then deleted from those polylines except for where it actually forms the boundary between physiographic provinces. A simple linear distance calculation was performed on those polylines and the resulting values translated into kilometers. The final distance surface was saved as a grid file (raster dataset) with a pixel width of 30 m. The minimum, maximum, mean, range, and standard deviation for each temporal period were calculated from this surface.

The same assumptions itemized in the discussion of average nearest neighbor above also apply to this analysis. In addition, we would have to make the assumption that physiographic regions are easily discernible and were effectively utilized by prehistoric people as territorial boundaries. This may not be an altogether useful assumption, but as we were exploring the potential to extract information from this dataset, we were willing to accept it for now. Other possible avenues of similar research would be to analyze the use of watersheds, waterways, or large wetlands as boundaries.

Table 6.2 Distance to Physiographic Edge Analysis - Spatial Statistics.

Period	Min	Max	Range	Mean	STD
Early Paleoindian	0.39	33.64	33.24	14.28	10.32
Late Paleoindian	0.27	33.05	32.77	11.95	8.72
Early Archaic	0.00	69.55	69.55	11.95	10.41
Middle Archaic	0.03	72.72	72.69	12.61	10.55
Late Archaic	0.04	80.96	80.92	14.70	14.37
Early Woodland	0.06	81.90	81.84	14.63	16.35
Middle Woodland	0.00	82.93	82.93	18.47	17.59
Late Woodland	0.06	84.55	84.49	30.50	26.96
Early Mississippian	0.03	80.18	80.15	18.83	20.84
Middle Mississippian	0.09	85.28	85.18	33.75	25.81
Late Mississippian	0.03	80.18	80.15	22.51	15.85
Protohistoric	0.17	64.42	64.25	15.79	13.00
Historic Indian	0.00	70.77	70.77	20.03	18.80
Historic Non-Indian	0.00	86.38	86.38	16.59	15.89
General Paleoindian	0.13	56.72	56.60	16.99	10.67
General Archaic	0.03	67.97	67.94	13.54	11.20
General Woodland	0.00	71.86	71.86	15.64	13.19
General Mississippian	0.00	73.73	73.73	15.39	13.24
Unknown Indian	0.00	73.99	73.99	14.91	12.97
Unknown	0.00	85.41	85.41	22.41	22.28
No Data	0.06	81.54	81.48	17.18	17.04

The results of this analysis (Table 6.2) indicate an increasing tendency for sites to be located further away from the physiographic boundaries as time goes on. The mean distance from physiographic boundaries is higher in later populations with all sites prior to the Middle Woodland averaging less than 15 km from the nearest physiographic edge, and all of those later averaging more than 15 km (Figure 6.2). Of course, given the crude nature of the dataset and the assumptions, it is not a convincing argument for any strong settlement interpretations.

To further examine these trends however, we categorized physiographic edge distances into a series of classes (<1 km, 1 to 5 km, 5 to 10 km, 10 to 20 km, 20 to 40 km, 40 to 80 km, and >80 km). Summary values were then calculated (Table 6.3) for each of the defined categories and observations tested against expected values (chi-square analysis – Table 6.4). Although the overall chi-square value is significant, only a few of the observations contributed to that significance. There was a very weak significant tendency for more Early Paleoindian sites to occur within 1 km of a physiographic edge than expected (however, the overall low number of Early Paleoindian sites suggests that there are serious sampling issues). There was also a weak tendency for more Early and Middle Woodland sites to occur over 40 km from a physiographic edge than expected, suggesting some degree of centralized clustering. The higher quantity of Woodland period sites makes this a stronger correlation than the Early Paleoindian, but still too few sites exist to suggest the trend will hold up as we learn more about settlement in Georgia in the future. A

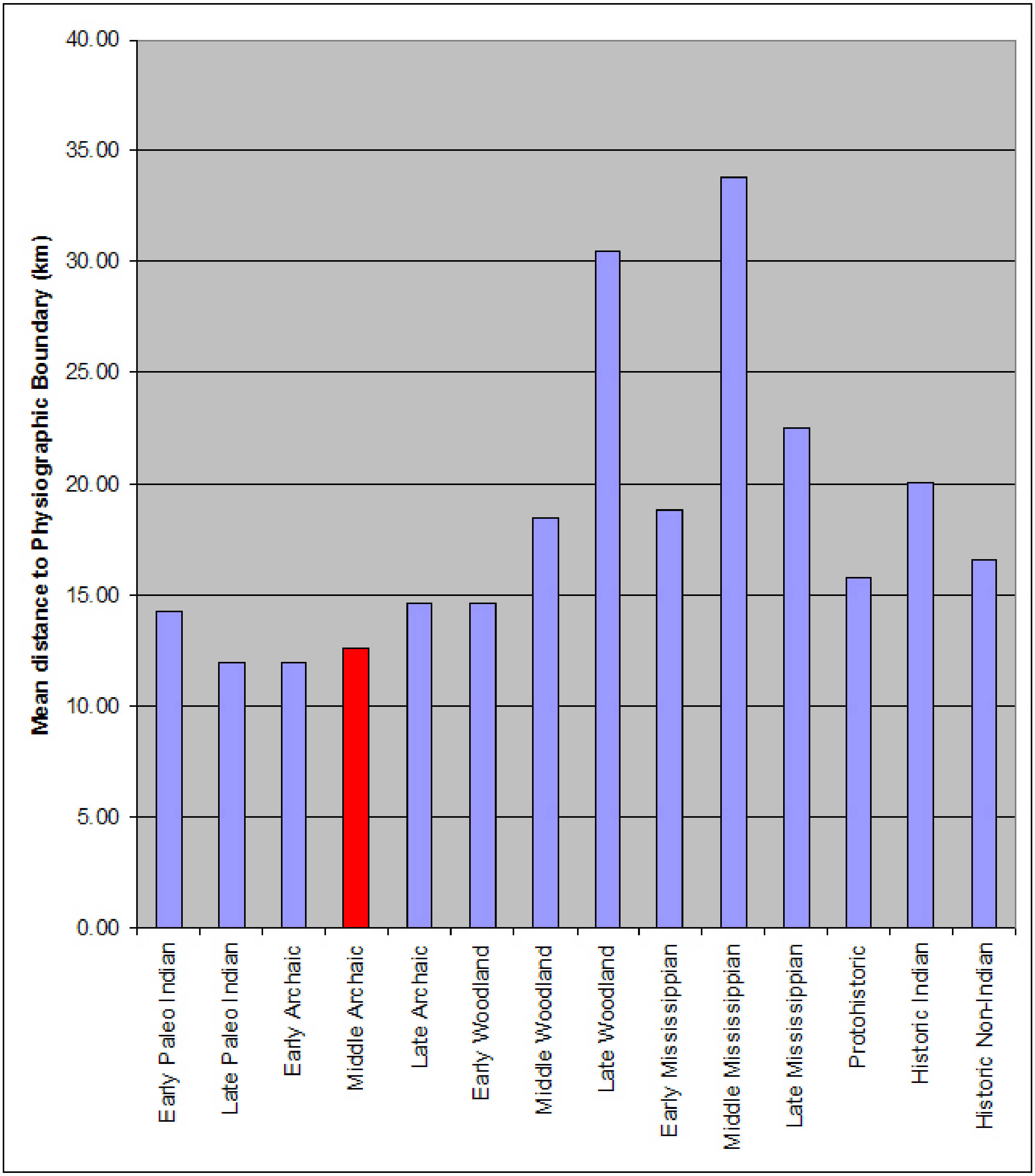


Figure 6.2 Mean distance to physiographic boundary by cultural period.

similar, though stronger, trend was found with the Early Mississippian. By far, the strongest tendency was for more Early Mississippian sites to occur farther than 40 km from a physiographic edge than expected. But once again, a statewide sample of 525 sites can be heavily skewed by merely the locations of a few survey tracts. To illustrate these trends Figure 6.3 shows the percentage of sites by distance category.

Specifically with respect to the Middle Archaic assemblage of sites, there did not appear to be any significant deviation from expectations within distance categories. The overall trend exemplified by the mean distance values does follow the pattern of increasing distance from physiographic edges as time progresses (with more than the Early Archaic, but less than the Late Archaic). But using the distance classes that trend is very weak, and significant only when combined with the trends seen in the other categories. Perhaps more refined data (e.g., reflecting site types or interpreted behaviors) would help clarify this issue.

6.3 OTHER ANALYSES AND RECOMMENDATIONS FOR FUTURE RESEARCH

We were also interested in addressing the nature of Middle Archaic settlement with respect to additional traits and environmental variables; such as site size, topographic setting, and elevation differences. Unfortunately, these data values are not readily selectable from the GASF database. On the site forms, site size is defined purely by length and width. An estimated site size can be calculated, but for multi-component sites it is not clear whether we can consider that size to be associated with each of the components. Topographic setting is left blank on a large proportion of the site forms, and is often incorrect when it is defined. Correcting this by using the digital elevation (DEM), watershed, and stream models proved impossible for the entire state. Likewise, examination of the elevation differences proved impossible because of the size of the DEM and the inaccuracy of many of the UTM coordinates. It is best to consider examinations of this sort on a smaller dataset, perhaps keyed to a single study area (such as the Oconee River Valley) where sufficient archaeological data exists.

To specifically address the nature of Middle Archaic settlement choice, we would recommend that future research compile more accurate interpretations of site location, site size, site type-component distinctions, artifact assemblage information, survey areas, and more complete behavioral interpretations. This cannot currently be done with the information provided in the GASF site form. Additionally, a fuller understanding of Middle Archaic settlement will only arise from constructing testable hypotheses of landscape use based on human behavior. That behavior is manifest in the spatial environment and may be observable in the archaeological record.

Table 6.3 Distance to Physiographic Edge Analysis - Distance Categories.

	Distance Categories (count of sites - observed values)							
Period	**<1 km**	**1-5km**	**5-10km**	**10-20km**	**20-40km**	**40-80km**	**>80km**	**Total**
Early Paleoindian	5	6	9	6	4	1	0	31
Late Paleoindian	6	41	42	46	32	1	0	168
Early Archaic	82	279	228	315	278	18	0	1200
Middle Archaic	99	379	337	458	497	20	0	1790
Late Archaic	167	607	539	740	679	249	5	2986
Early Woodland	65	180	176	176	246	274	14	1131
Middle Woodland	78	295	201	206	219	63	6	1068
Late Woodland	107	326	363	507	359	228	1	1891
Early Mississippian	27	74	39	121	66	188	10	525
Middle Mississippian	33	124	92	78	101	35	1	464
Late Mississippian	75	256	327	679	1056	261	1	2655
Protohistoric	2	18	23	14	33	4	0	94
Historic Indian	89	136	89	192	180	115	0	801
Historic Non-Indian	1325	4124	2878	3974	4379	1367	12	18059
TOTAL:	2160	6845	5343	7512	8129	2824	50	32863

Table 6.4 Chi-Square Analysis of Distance to Physiographic Edge.

	Distance Categories (o-e^2/e^2)							
Period	**<1 km**	**1-5km**	**5-10km**	**10-20km**	**20-40km**	**40-80km**	**>80km**	**Total**
Early Paleoindian	2.11	0.01	0.62	0.02	0.23	0.39	1.00	4.38
Late Paleoindian	0.21	0.03	0.29	0.04	0.05	0.87	1.00	2.49
Early Archaic	0.00	0.01	0.03	0.02	0.00	0.68	1.00	1.75
Middle Archaic	0.03	0.00	0.02	0.01	0.01	0.76	1.00	1.84
Late Archaic	0.02	0.00	0.01	0.01	0.01	0.00	0.01	0.06
Early Woodland	0.02	0.06	0.00	0.10	0.01	3.31	50.92	54.42
Middle Woodland	0.01	0.11	0.02	0.02	0.03	0.10	7.25	7.54
Late Woodland	0.02	0.03	0.03	0.03	0.05	0.16	0.43	0.75
Early Mississippian	0.05	0.10	0.29	0.00	0.24	10.03	132.69	143.41
Middle Mississippian	0.01	0.08	0.05	0.07	0.01	0.01	0.17	0.41
Late Mississippian	0.33	0.29	0.06	0.01	0.37	0.02	0.57	1.64
Protohistoric	0.46	0.01	0.25	0.12	0.18	0.25	1.00	2.27
Historic Indian	0.48	0.03	0.10	0.00	0.01	0.45	1.00	2.07
Historic Non-Indian	0.01	0.01	0.00	0.00	0.00	0.01	0.32	0.36
TOTAL:	3.75	0.76	1.79	0.47	1.22	17.05	198.36	223.39

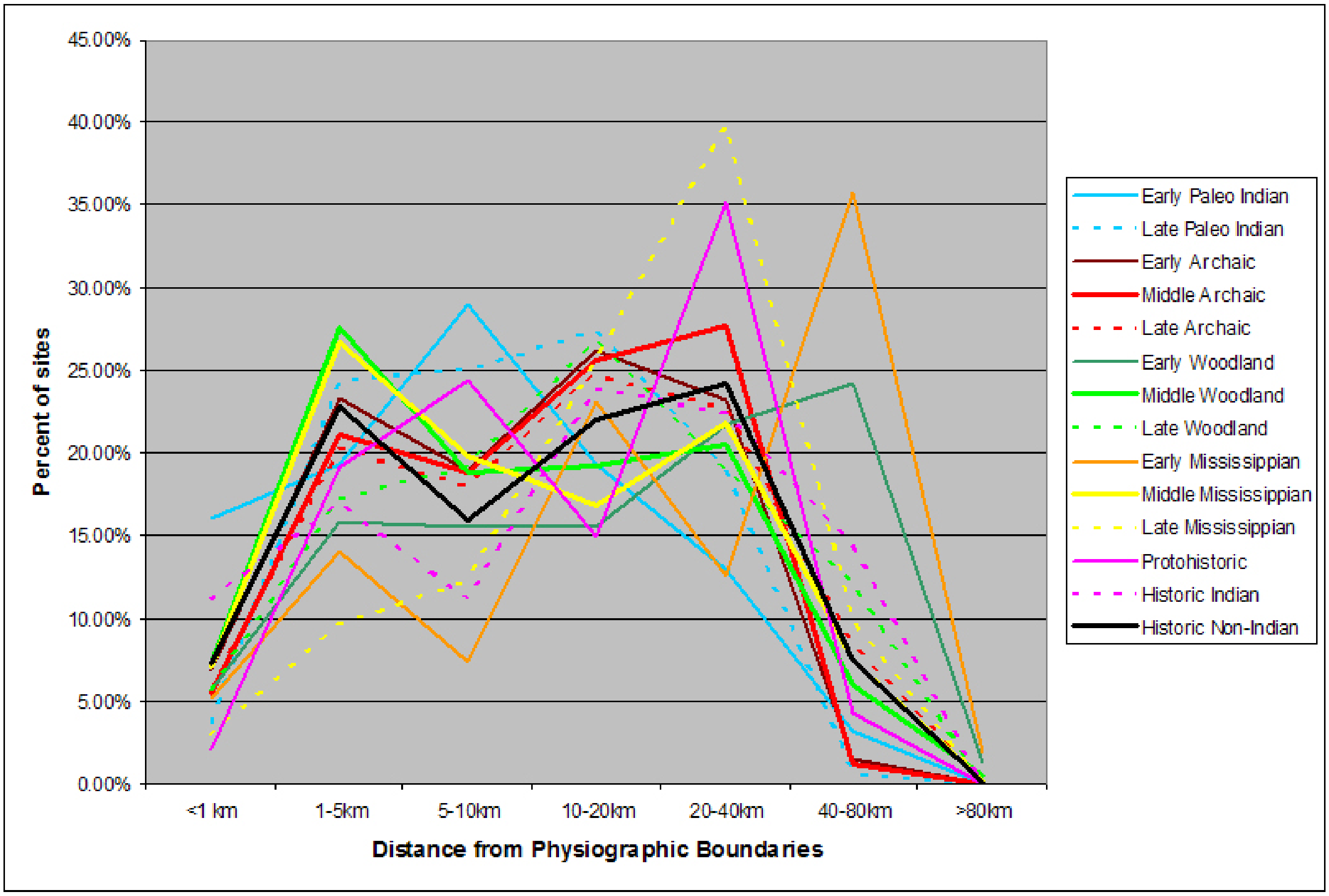


Figure 6.3 Percentage of sites for each series of distance classes and each cultural period.

7.0 INVESTIGATING MIDDLE ARCHAIC OCCUPATIONAL VARIABILITY

This chapter suggests how information on occupation variability may be obtained from the systematic and intensive excavation of a Middle Archaic lithic scatter. Site 9HY321 is situated on a level floodplain of Walnut Creek, a tributary of South River, in Henry County, Georgia. The project area lies in the Washington Slope District of the Piedmont Physiographic Province. The site was initially identified during a 2002 survey (Benson 2002), and archaeological testing investigations revealed evidence of substantial Middle Archaic deposits buried under alluvium (Patton 2003). The diversity of artifacts recovered and the presence of subsurface cultural features, including clusters of fire-cracked rock, possibly the remains of hearths or cooking pits, suggested the site held a potential to yield important information on mid-Holocene subsistence and foraging strategies. Fluvial processes and the actions of roots or burrowing animals appeared to have affected the vertical integrity of these deposits, but this disturbance did not obscure horizontal concentrations of artifacts. Archaeological data recovery field investigations were conducted prior to a bridge replacement construction project (Shah et al. 2008), and data generated from these and previous investigations (Figure 7.1) were compiled to test long-held assumptions underlying models of Middle Archaic foraging, settlement, and subsistence strategies proposed for the South Atlantic Slope.

Archaeologists believe Middle Archaic populations were generalized foragers, organized as nuclear households, practicing a high degree of residential mobility (e.g., Sassaman 1991). Hunters employed an all-purpose and expedient tool kit made from locally available materials (e.g., Cable 1992, 1996; Blanton and Sassaman 1989). Sassaman and his colleagues (1988) suggest mid-Holocene foraging ranges, once focused along drainages and that included the exploitation of both the Coastal Plain and Piedmont regions (see Anderson and Hanson 1988), now split along the Fall Line with territories becoming smaller and a reliance on the exploitation of inter-riverine regions increasing. This foraging pattern would create an archaeological record of small and redundant, short-term occupations exhibiting little inter-assemblage variability (Sassaman 1991). In the Piedmont, individual occupations would be represented by a relatively low density or diffused scatter of quartz materials reflecting activities associated with the early stages of lithic reduction. If the tool kits of some Middle Archaic hunters included curated points made from non-local raw materials (e.g., Ridge and Valley or Coastal Plain chert), then debitage from the re-shaping and/or the re-sharpening of these tools (i.e., late stage reduction) may also be discarded at these short-term camps. If all camps were occupied for comparable lengths of time and by groups of comparable social composition and size, then we would not expect to see drastically different densities in the artifacts discarded or in the spatial distribution of artifacts between individual Middle Archaic occupations.

An alternate model to this strictly modal pattern of Middle Archaic foraging behavior may be derived by recognizing some variability in foraging group composition and, therefore, occupational type and function. Some variability in foraging group composition may have occurred as a sociocultural response to seasonal differences in the availability of resources (e.g., changes in group size as a function of the human labor needed to process foods that were spatially and/or temporally constrained). Some variability may have also resulted from the occasional aggregation of foraging parties (i.e., households) for ritual or ceremony, and perhaps as temporary forays into neighboring territories (e.g., foragers from the Coastal Plain visiting the Piedmont). Based on these departures from the modal pattern, we may expect to find significant differences in the horizontal distribution of artifacts between temporally distinct occupations that can not be accounted for by occupational overlap alone. In other words, for individual occupations, we would not expect to always find an even or diffused scatter of quartz and non-local lithic artifacts, but rather concentrations of different raw material types and even debitage types (i.e., early versus late stage reduction) reflecting dissimilar tool production and maintenance activities during a single camping event. Some individual occupations may

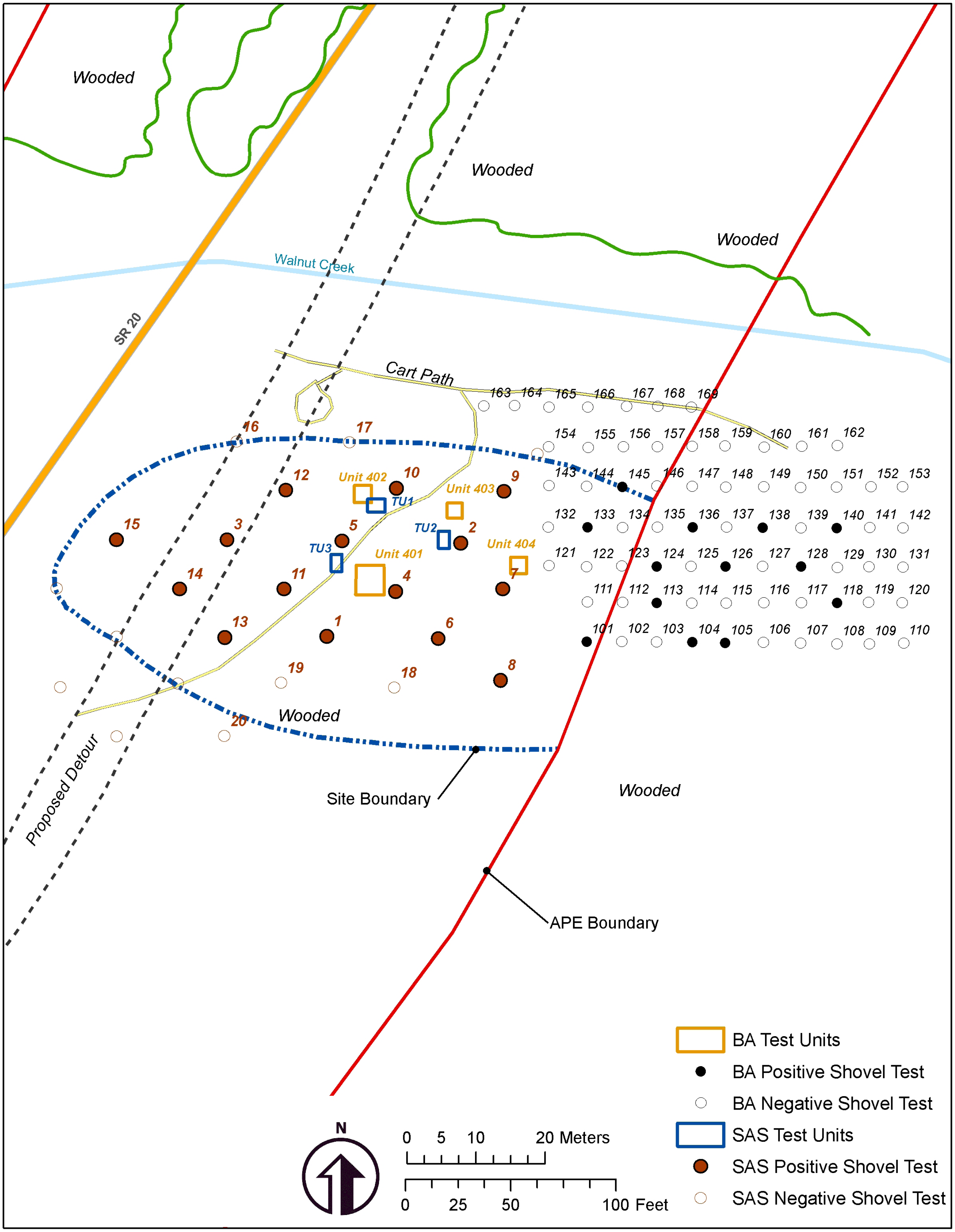


Figure 7.1 Plan map of 9HY321 showing the location of Phase I, Phase II, and Phase III shovel test and test unit excavations conducted by Southeastern Archeological Services (SAS) and Brockington and Associates (BA).

be characterized by a particularly high degree of artifact diversity, and if these were longer-term habitations or aggregations of several nuclear households, we may expect to see some spatial segmentation in social and economic activities (also see Kent 1991).

To test these models, we need to first identify the nature of material residues resulting from individual occupations at a Middle Archaic site, and then compare their artifact assemblages and spatial attributes. Because repeated use of a locale may result in an overlapping of archaeological deposits, it can be difficult to tease artifact density distributions apart to identify distinct occupations and/ or activity areas. If we begin with the assumption that most Middle Archaic occupations resulted in the discard of some lithic materials, then foragers camping at a locale: (i) either re-worked or did not rework curated, non-local lithic materials or tools; and (ii) either reduced or did not reduce locally available lithic materials to create new tools. Three lithic discard patterns are possible (after omitting the outcome of no reduction of non-local and no reduction of local lithic materials): (a) scatters of late stage reduction flakes on non-local chert with an absence of local quartz artifacts; (b) scatters of late stage reduction flakes on non-local chert along with early stage quartz artifacts; and (c) scatters of quartz reduction debitage but no evidence of retouching of non-local chert.

Ethnoarchaeological research suggests that the size of temporary camps of highly mobile foraging groups tends not to exceed 10 meters in diameter. Using count per square meter data and a consistent search radius of 10 meters, we can potentially identify individual occupations by entering coordinate, morphological and raw material data from systematic excavations into a Geographical Information Systems database to generate and analyze artifact density distributions. In the case of 9HY321, we attempted to tease apart individual occupations by independently examining the distribution of lithic artifacts made from both local and non-local raw materials and then compared their spatial distributions. The same was conducted for early and late-stage reduction flakes.

Figure 7.2 shows the spatial distribution of count densities for all flaked stone artifacts recovered from site 9HY321 and within the area of effect by the proposed road construction. The location of fire-cracked rock cluster features encountered during archaeological testing and excavation investigations is indicated by the letter R. Based solely on the distribution of flaked stone artifact densities, site 9HY321 appears to be a diffused lithic scatter with as many as four distinct areas of higher lithic artifact concentration. Artifact analysis determined that late stage quartz debitage dominated the lithic assemblage of 9HY321, and therefore much of the patterning we see in Figure 7.2 is biased towards debris related to the reduction of locally-available raw materials for tool production and maintenance (compare with Figure 7.3).

The distribution of quartz debitage may potentially be masking any spatial patterning between individual occupations. In other words, the diffused artifact scatter may actually be the result of repeated use of the site, perhaps for short periods of time, and perhaps with a high occurrence of spatial overlap of temporally discrete occupations. How can we identify the locales of individual occupations for the purposes of examining patterns in the spatial organization of activities? One strategy may be to use the distribution of non-local raw materials.

Non-local materials occasionally contributed a small proportion of the curated tool kits of highly mobile Middle Archaic groups in the Piedmont. Their numbers typically do not overwhelm the lithic assemblage. Therefore, the distribution of their spatial densities may be more tightly concentrated than that of the more ubiquitously used quartz, particularly if their use on the site reflect the locations of temporally discrete occupations. In fact, when we separate this artifact category and examine its spatial distribution (Figure 7.4) we see a few distinct concentrations rather than an overall diffused scatter. When we overlay this distribution on that generated for local quartz (see Figure 7.3), we see additional spatial patterns (Figure 7.5). What we find is that while there are some areas of clear overlap, there is at least one discrete concentration of local lithic artifacts (Cluster 1) and one discrete concentration of non-local lithic artifacts (Cluster 2). Both local and non-local raw materials, and a denser discard of lithic artifacts, characterize Clusters 3, 4, and 5.

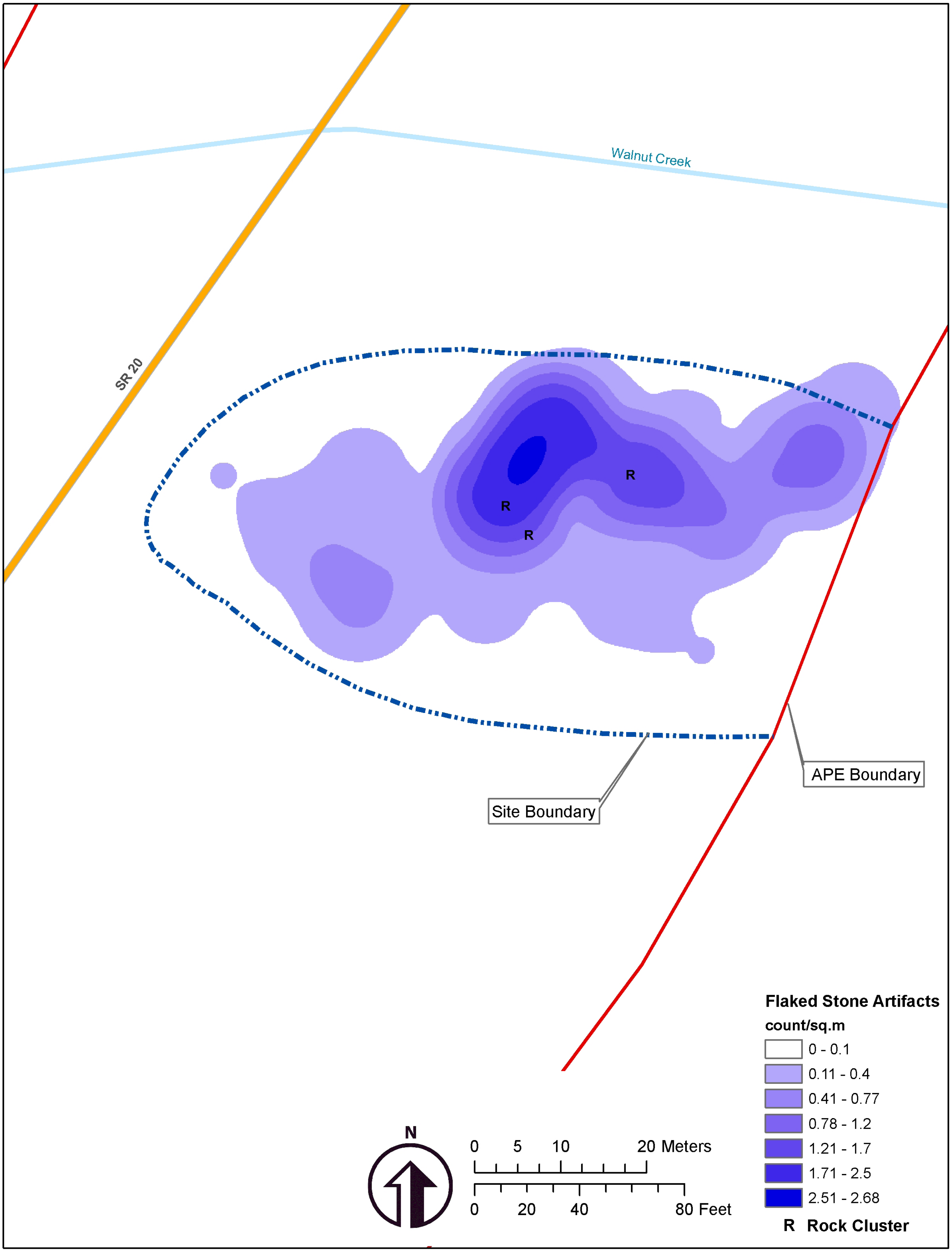


Figure 7.2 Density distribution of all flaked stone artifacts.

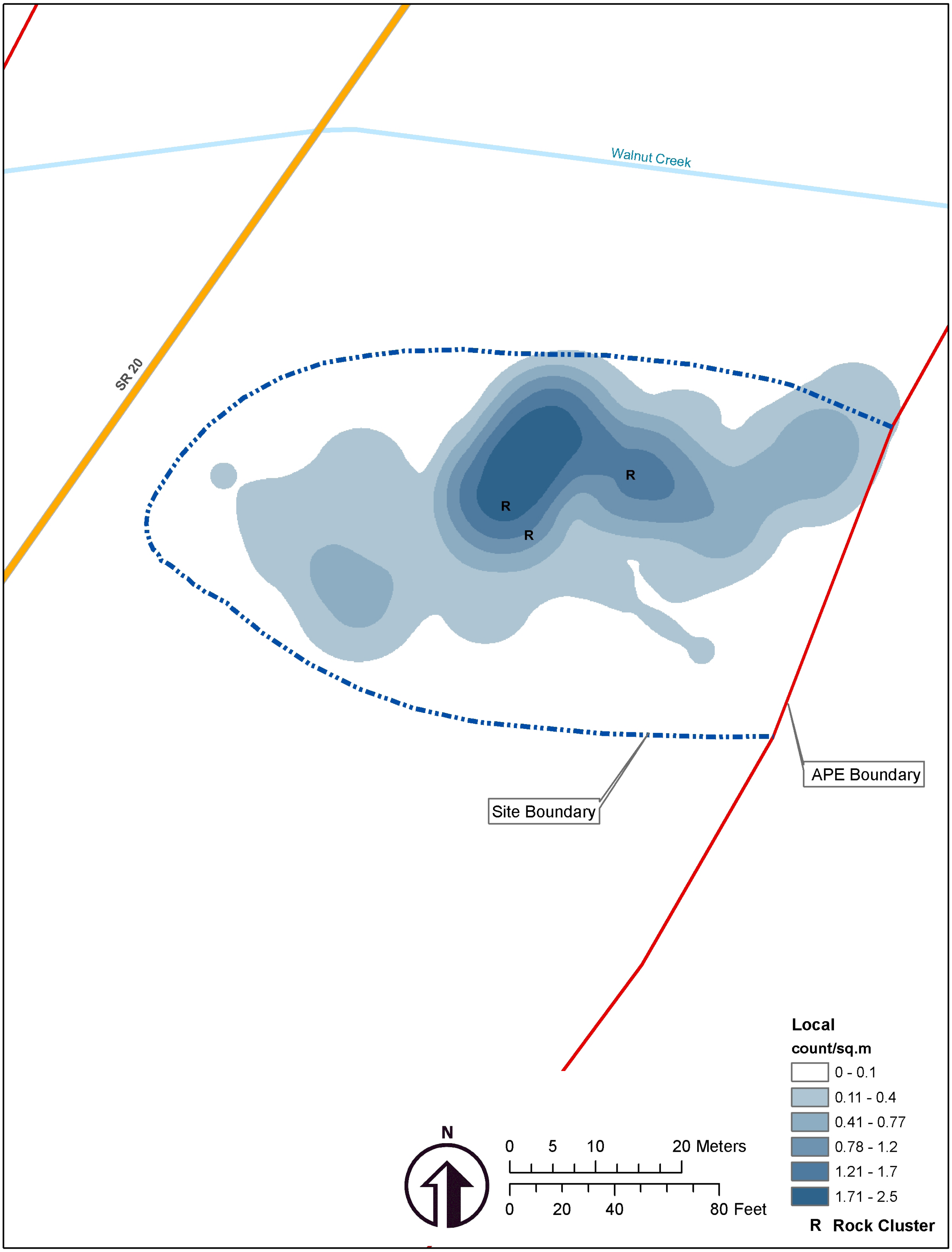


Figure 7.3 Density distribution of flaked stone artifacts made on locally-available raw materials.

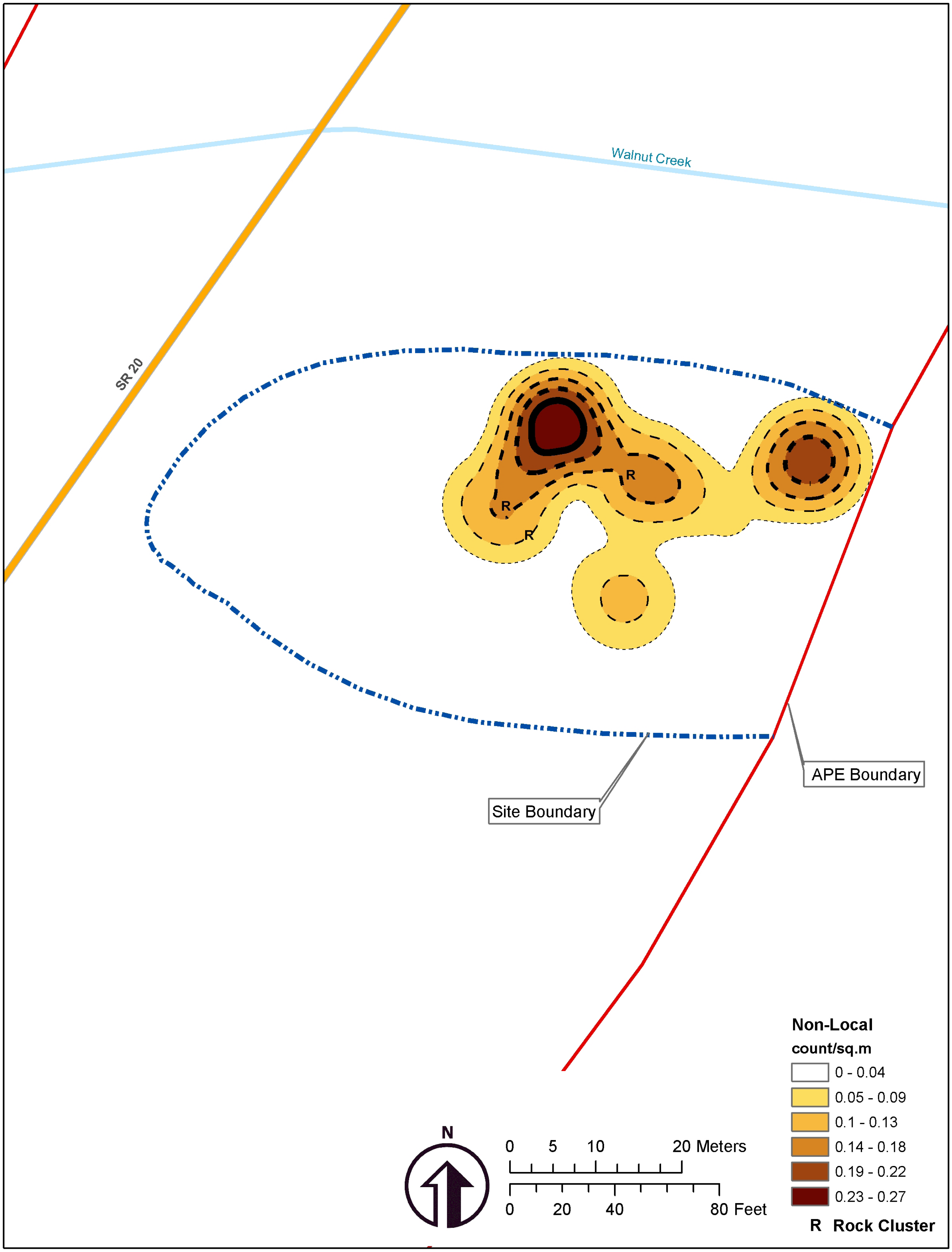


Figure 7.4 Density distribution of flaked stone artifacts made on non-local raw materials.

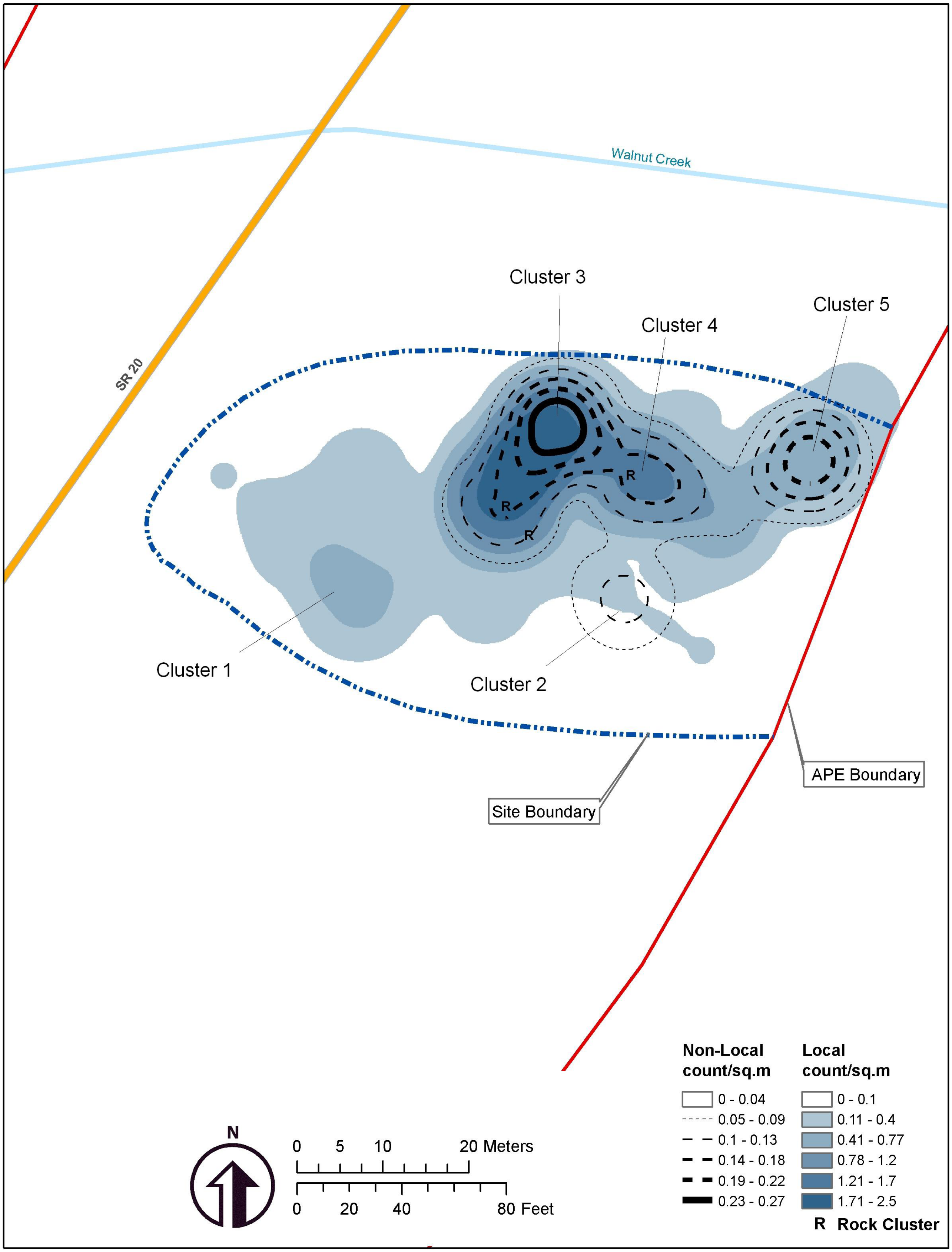


Figure 7.5 Density distributions of non-local overlaying local flaked stone artifacts.

As with local quartz, late stage reduction debris overwhelms the lithic assemblage of 9HY321. Because we do not see clear spatial distinction or patterning in the late stage reduction of lithic materials across the area of the site investigated (Figure 7.6), this suggests a predominance of tool maintenance or late stage tool production activities conducted during the Middle Archaic occupations of this locale. Such debitage discard behavior is generally associated with hunting activities (e.g., the butchering of animal carcasses). When we examine just the distribution of early stage reduction debitage (Figure 7.7), we begin to see a more distinct pattern. When we compare the overlap of these distributions (Figure 7.8), further insights can be made into site use, occupation, and the spatial organization of activities.

The distribution of late stage reduction debitage is somewhat diffused with one area of heavy density (Cluster 3), two areas of moderate density (Clusters 4 and 5), and one area of relatively low density (Cluster 1). The distribution of early stage reduction is more spatially concentrated than diffused, but the areas of heaviest concentration overlap with the areas of heaviest late stage reduction debris discard. Concentrations in Figure 7.3 clearly show two regions (Clusters 3 and 4) where lithic reduction activities were highly localized, spatially discrete, with debris densities quickly dropping outside these locales.

Even more interesting is the fact that we see the occurrence of fire-cracked rock features ('R') in the areas of relatively lower lithic debitage concentration. At this time, we do not have enough data to ascertain if Clusters 3 and 4 are the remains of a single camp, or if they represent two temporally discrete occupations. Because of some post-depositional displacement of artifacts and sediments at this alluvial site, depth data can not be relied upon to clarify this issue. Some tentative conclusions, however, may be drawn from broad differences in the vertical distribution of fire-cracked rock features encountered in these two locations within the site. For instance, the easternmost fire-cracked rock feature was recovered at a depth significantly lower than the features to its west (also see Patton 2003). Based on results from geoarchaeological studies conducted during archaeological data recovery investigations (see Shah et al. 2008), this difference in depth can not be accounted for by a difference in alluvial deposition. Therefore, until there is strong evidence to believe otherwise, we will assume these two clusters represent temporally distinct occupations.

In contrast to the clusters described above is the more diffuse and lower concentration of early and late stage reduction activity in the southwest corner of the site (Cluster 1). From Figure 7.5, this spatially discrete concentration of lithic artifacts appears to be entirely composed of locally available quartz, with no evidence of non-local raw material types represented. If we assume the southwest lithic scatter to be the remains of a single, temporally discrete, occupation, then at first glance, the occupation appears to have the material signatures of the Middle Archaic Piedmont settlement type described by Blanton and Sassaman (1989:59). More research is needed, and the lithic assemblage of this one locale within 9HY321 needs to be intensively studied, before we can draw further comparisons to other Piedmont Middle Archaic occupations, particularly those that were situated in forested or ridge-top environments. For the purposes of the current context study, however, the more significant result concerns the contrast between the more typical Middle Archaic lithic scatter (Cluster 1) and the denser, spatially-segmented, occupations described above (Clusters 3 and 4).

Let us now turn our attention to the rock cluster features. Clastic materials like granite, quartz, and limestone are poor at resisting thermal shock of rapid temperature changes; therefore, when these rocks are heated and then cooled, they tend to crack. Fire-cracked rock can result from rocks that are used to line a fire-pit as well as from rocks that are used in indirect-heat cooking (i.e., stone boiling). Experimental studies comparing the thermal shock altercation of stones used in roasting and boiling showed no significant difference in the manner in which rock cracks (e.g., House and Smith 1975). The material of all fire-cracked rock recovered during Phase III investigations was noted to be quartz cobble that had likely split from heating and then quick cooling. Because the cobbles appear to have been broken in rough, unpredictable ways, it is unlikely that the quartz was exposed to fire for the purpose of heat-treating for tool manufacture.

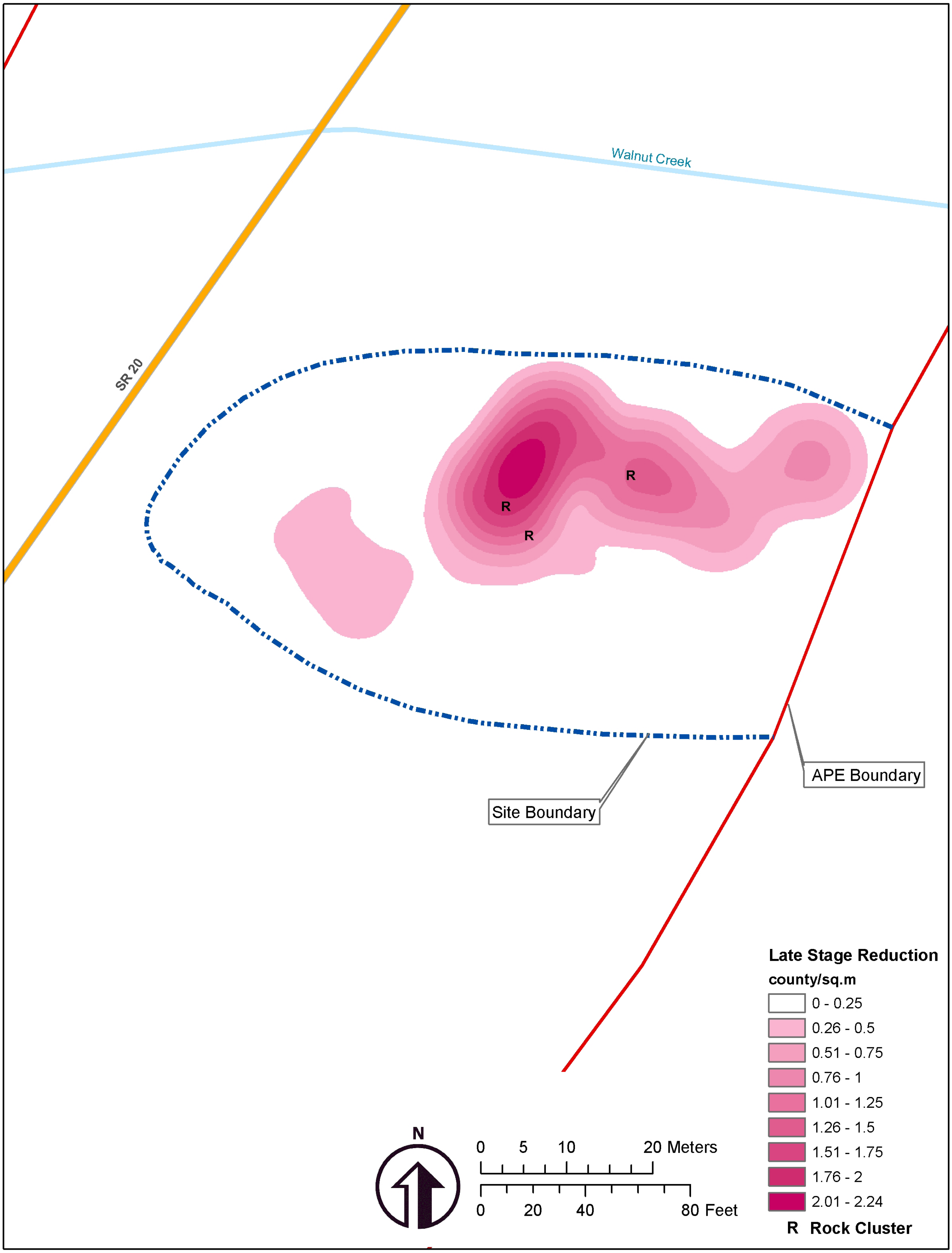


Figure 7.6 Density distributions of late stage reduction debris.

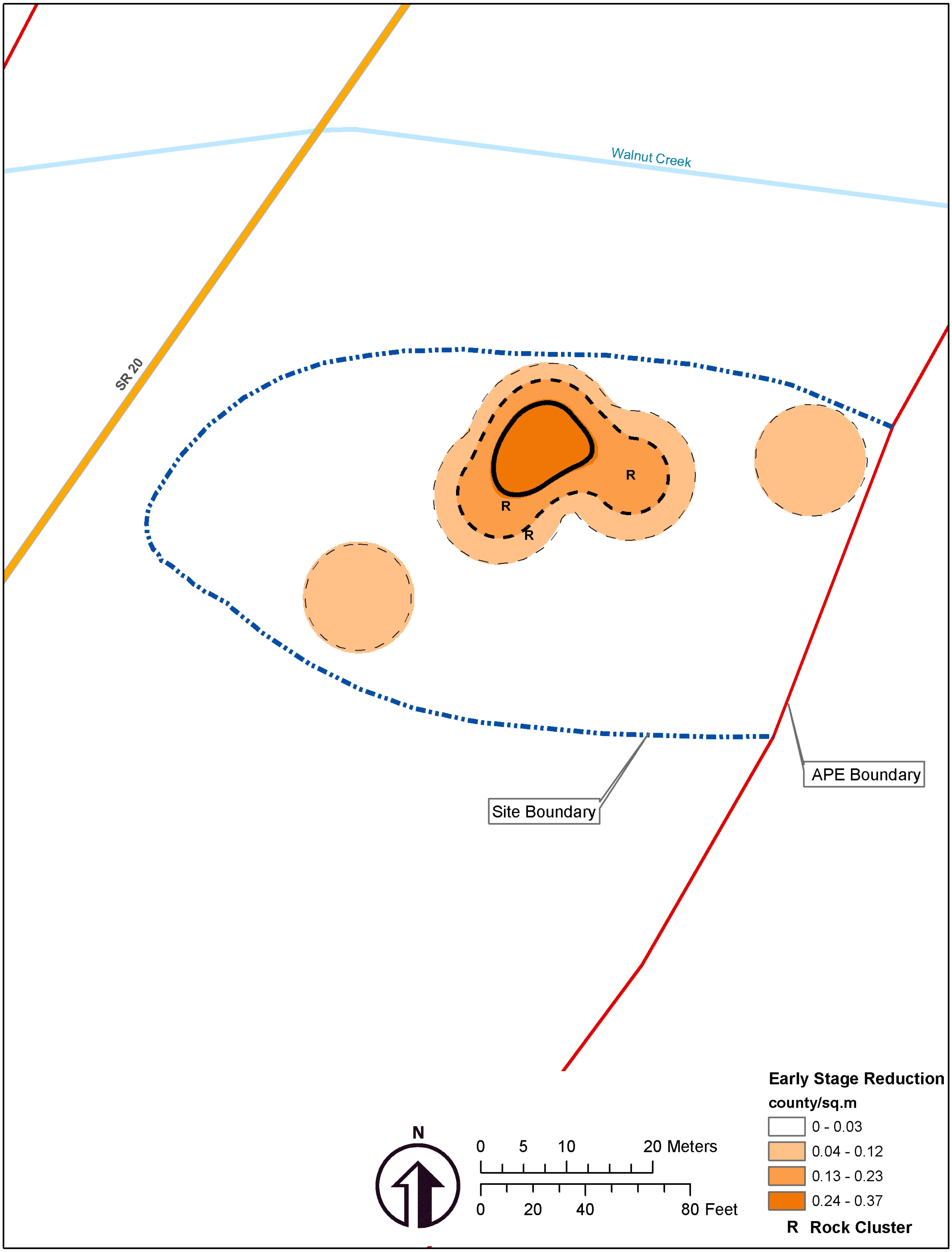


Figure 7.7 Density distributions of early stage reduction debris.

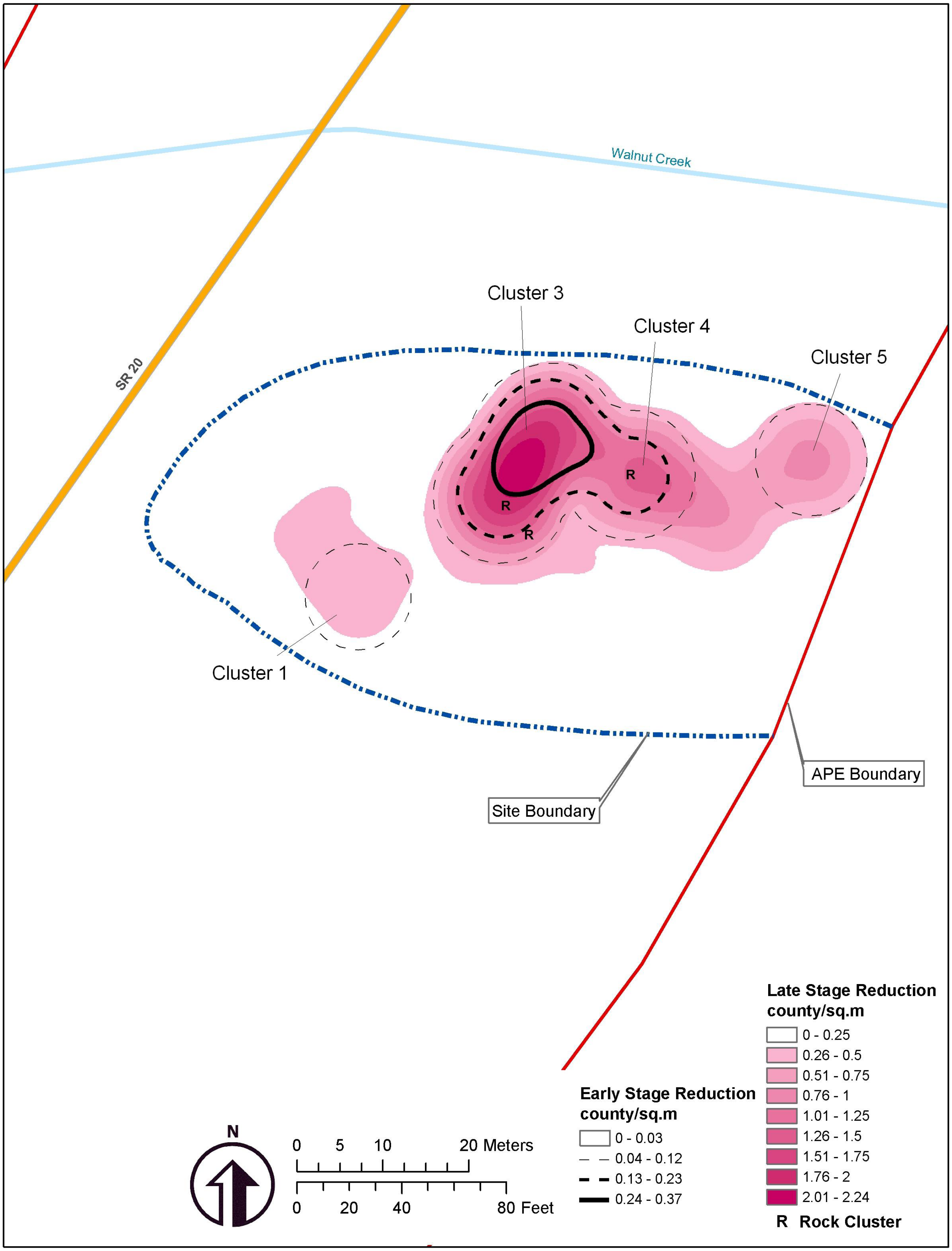


Figure 7.8 Density distributions of early stage and late stage reduction debris.

Included in the early cooking techniques of prehistoric populations of the South Atlantic Slope was stone boiling (Sassaman 1993:113). While there is no physical means of distinguishing between rock that was cracked in roasting and rock that was cracked in the use of indirect, moist-cooking methods (see House and Smith 1975), we can tentatively argue that judging from the manner in which rocks were recovered from site 9HY321—horizontally scattered as well as concentrated in piles or clusters—they appear to have been discarded through tossing or dumping behaviors. Small piles or clusters of rock may have been created as these rocks were dumped out of the container following food preparation; widely-distributed scatters of rock may have formed as rocks were tossed out of a container, perhaps repeatedly during moist-cooking, as stones that lost their heat were removed in the effort to make room for freshly heated ones.

By distinguishing and comparing the spatial distributions of local and non-local lithic artifacts, and early and late stage reduction flakes, we can now identify some of the residues left by individual and temporally discrete occupations at site 9HY321, and examine variability between their assemblages and spatial features. The occupation represented by Clusters 3 and 4 are characterized by a high degree of variability in artifact type, overlapping concentrations in both early stage and late stage reduction activities, and the prevalence of fire-cracked rock as cluster features and scattered discard in areas just outside of higher density lithic discard. The spatial patterns between rock cluster features and the two higher concentrations of lithic debris hold important implications for our understanding of the social organization of economic activities during the Middle Archaic. Unfortunately, we do not have enough fine-grain data to address the spatial organization of activities represented, but we can make some general hypotheses here and leave them to be tested in future research projects. One possibility for the spatial segmentation in the organization of food producing and tool maintenance activities may relate to some level of division of labor between the inhabitants of these occupations, perhaps based on sex or gender. Another possible explanation is this occupation was conducted over a relatively long period of time, in which case we would expect to see discard activity becoming increasingly localized. Finally, we would like to propose this occupation as a possible fall season use of the site, based largely on the evidence for nut processing from ethnobotanical analyses (see Shah et al. 2008). It is possible that the fire-cracked rock assemblage used in stone-boiling was an outcome of the mast processing during the fall and early winter seasons. That no significant remains of structures were recovered suggests that this was still a temporary camp, not occupied for an entire season.

Also, the artifact assemblages of the two occupations represented as Clusters 3 and 4 are more similar to one another than they are to other Middle Archaic occupations represented at the site. The residues of repeated short-term camps likely created the general diffused scatter of quartz artifact discard at the site (see Figure 7.2). Cluster 1 may represent residues resulting from the more typical or more frequently occurring Middle Archaic occupation; the fact that we find here a low density scatter with little spatial segmentation suggests a temporary encampment by a nuclear family likely foraging for resources in the inter-riverine region of the Piedmont as hypothesized by Sassaman's (1991) adaptive flexibility model.

Clusters 2 and 5 suggest some variation from occupations predicted by Sassaman (1991) and others (e.g., Cable 1992, 1996; Blanton and Sassaman 1989). In the occupation represented by Cluster 2, there are few if any artifacts of local quartz and the discarded materials consist almost entirely of debitage and tools produced from chert that can be sourced to the Coastal Plain. If groups who regularly exploited resources in the Coastal Plain occasionally made foraging trips into the lower Piedmont (say, to acquire key resources that were otherwise not or infrequently available in the Coastal Plain), then we would expect them to bring a tool kit that consisted of materials local to their home range. Because the quality and flaking properties of quartz tends to be less predictable (see Jones 2006), it may not be worth investing in the procurement and processing of local quartz materials, particularly if they are only making a temporary foray into the Piedmont and intend to return to their home range within the Coastal Plain.

The residues of the occupation represented by Cluster 5 contain both local and non-local lithic materials. The occupational type appears to be similar to hypothesized aggregation of groups represented by Clusters 3 and 4. In the case of Cluster 5, non-local raw materials in the tool kits of the inhabitants may have resulted from direct acquisition by foraging groups moving occasionally or wandering into the Coastal Plain or through trade, perhaps a combination of these two processes. Together, the evidence from Clusters 2 and 5, therefore, suggests foraging was not necessarily restricted to the home range. While the Fall Line may have been the dividing line separating home territories (see Sassaman et al. 1988), this physical boundary may have been fluid or somewhat permeable to human movement. Such findings bring into question how land tenure was organized in these hunting and gathering societies, an issue that certainly should be pursued by future researchers.

What the results of archaeological data recovery investigations at site 9HY321 indicate is that Middle Archaic archaeological sites may be the result of an overlapping group of diverse occupational types. Future research needs to attend not only to the possibility of occupational variability within Middle Archaic deposits in both single and multiple component archaeological sites, but also to characterize the archaeological signatures (assemblage, spatial patterns, seasonality) of these diverse occupation types. More research attention certainly needs to be dedicated to understanding what a single, typical, Middle Archaic foraging camp may have looked like, and then examine how these occupations and settlement strategies varied over time within a locale (i.e., site), drainage systems, and regional system.

What the results of data analysis from excavations at Site 9HY321 indicate is that there was some fluidity in the nature of group composition during the Middle Archaic. At times, groups may have aggregated, possibly in the form of several households coming together for the purposes of ritual or ceremony, and/ or to undertake labor-intensive food processing activities. That we recovered a single piece of ochre within the area marked as Cluster 3 points to the possibility for some ritual activity during this occupation. Occasional aggregations may have occurred in floodplain locales, particularly if groups were traveling far distances by watercraft in order to come together. This hypothesis can be tested in future projects by more intensive excavation at upland locations to rule the presence of aggregations at ridge-top locales. It would also be helpful to determine if these kinds of aggregations were restricted only to floodplains locales on higher-order streams and rivers.

8.0 PRESERVATION AND RESEARCH PRIORITIES

We are only at the tip of the iceberg in terms of understanding the social and economic organization of Middle Archaic cultures of the South Atlantic Slope, and the Georgia archaeological record has much to contribute to this study. Because of shared material culture traits, most specifically morphological resemblances in projectile point forms, it has generally been assumed that populations across the Southern Piedmont practiced comparable settlement/ mobility and resource procurement strategies. These groups were characterized by similar forms of social structure and political economy, that is, the social relations underlying access to resources. The results of intensive research conducted in the Carolinas has tended, therefore, to temper our understanding of Middle Archaic groups in the Georgia Piedmont, but both previous and recent excavations in Georgia suggests there may have been more intra-regional and/or diachronic variability than previously acknowledged.

Given that there remain so many unanswered questions about this 3,000 yearlong period in Georgia's past, it is surprising that more Middle Archaic components have not been considered significant or eligible for listing on the National Register of Historic Places (NRHP). Based on data presented in Chapter 4.0 of this report, Middle Archaic resources in both multiple and single component sites have been recommended NRHP-eligible at an exceptionally-low rate, particularly when compared to other cultural periods of similar time ranges and other sub-divisions of the Archaic Period. At multiple component sites, rarely are the Middle Archaic archaeological deposits the focus of research attention, and single component Middle Archaic sites are almost never recommended for testing beyond survey level investigations to ascertain research potential. Also, recall that only 35 of the 625 single component Middle Archaic sites identified in Georgia as of October 2007 were recommended NRHP-eligible, and of these only two (9HY321 and 9BI129) have actually received intensive investigation in the form of Phase III archaeological data recovery.

If Georgia's archaeological record truly has something to contribute to our understanding of these prehistoric societies, then clearly the greatest challenge is in recognizing the research potential of components dating to the Middle Archaic. On making recommendations for the future, therefore, we must consider how this and other criteria for NRHP evaluation have and should be applied to these resources. It also bears considering how we can maximize our ability to illuminate the past through archaeological research and preservation, and the best ways to present those findings to the archaeological community and the public.

8.1 RECOMMENDATIONS FOR NRHP EVALUATION

When assessing the integrity of Middle Archaic sites, including the potential for intact archaeological deposits and cultural features, we should always compare it against the material residues that were left at the time the site was formed. Because Middle Archaic foragers conducted activities at open air camps for only very brief durations of time before moving on, any resulting cultural features were likely ephemeral and may not have created soil stains that would be visible today for recovery by archaeologists. In fact, ephemeral Middle Archaic cultural features may only experience preservation under exceptional conditions. Take, for instance, the material residues of the Middle Archaic foraging camps that were buried under alluvial deposits shortly after abandonment at Sixtoe Field (9MU100) archaeological site (see Section 4.2.3 of this report). While such sites may provide a unique opportunity to examine the spatial organization of an *in situ* Middle Archaic camp, these environmental conditions are not typical and their role in site selection should be acknowledged. At the vast majority of locations chosen by Archaic groups for encampment, site formation processes would not have led to such a unique level of preservation, and therefore should not be interpreted as a lack of site integrity.

A more serious constraint placed on recommending Middle Archaic sites for inclusion in the NRHP, however, has been the demonstration of information potential (36 CFR 60.4 [d]). The constraint stems from an explicit assumption that the ability of these resources to yield information about the Middle Archaic has been maximized at the survey level of investigation and that more intensive archaeological excavation would not produce new or important insights into this sub-period. Also influential in our ability to find support for eligibility is the implicit assumption that a prehistoric archaeological site can provide information about the past only when a high potential for the preservation of cultural features exists.

As discussed above, Middle Archaic cultural features and *in situ* deposits are not likely and should not overwhelm the NRHP-eligibility evaluation. What we really need to question, however, is whether the information potential of these sites has truly been maximized at the level of survey. As archaeological data recovery investigations at site 9HY321 have demonstrated, there may be much to learn by studying spatial patterns in the distribution of discarded lithic artifacts, even when not *in situ*. For other study cases, important research questions may be answered through a comparative analysis of material residues and geographic features generated from a group or district of Middle Archaic components, even when these sites may individually not exhibit a high-degree of information potential. It is important to remember that the NRHP-eligibility of Middle Archaic resources should be argued for based on their ability to generate data to answer research questions, and not exclusively on the level of preservation exhibited.

For sites that are identified but recommended ineligible for listing on the NRHP, there is room to improve the quality of data that is recorded from survey investigations and testing. In the case of multiple component sites, for instance, it is helpful to define the spatial extent of Middle Archaic deposits apart from the archaeological site's overall boundaries. More attention should also be given to recording environmental features of the site's immediate landscape, including any nearby water resources (e.g., springs), and this information should be made available on the site form and ultimately coded in the NAHRGIS database. Access to such information will greatly improve our ability to conduct regional studies using GIS (see Chapter 6.0 of this report), and will be critical in developing our understanding of Middle Archaic cultural responses to fluctuating climatic conditions, landscape changes, and resource predictability (see Chapter 2.0 of this report).

8.2 PRIORITIES FOR RECOMMENDING SITES TO THE NRHP

Certain kinds of Middle Archaic sites may be deemed more worthy of preserving than others, and are subject to more lengthy and intensive research programs. Most prominent among these are large rockshelters with deeply stratified deposits. As of October 2007, the GASF database includes 33 cave or rockshelter sites (all in the Piedmont), of which only two are known to contain Archaic deposits. The absence of well-stratified rock shelter sites in Georgia suggest these locales should rate at the highest level of preservation priority and research potential.

Preservation priority should also be given to locales of camp sites and open habitations that were repeatedly occupied during the Archaic. Of the 2,069 recorded prehistoric "village" or "open habitation" components in the GASF database, 320 have Archaic Period occupations. Among these are the coastal shell rings as well as most of the larger base camps situated in major river valleys. Few of these sites have undergone intensive excavation, and we have few or no representatives from many of Georgia's physiographic regions and districts. Preservation of such sites would be a high priority contingent upon the nature of the deposits and their potential to answer research questions. For research questions specific to the Middle Archaic, these sites are important because they can yield data on the use of different locales over time and how settlement and foraging strategies may have changed.

Middle Archaic lithic scatters have traditionally been given little research attention. Low artifact density and disturbance would typically suggest that these sites should rarely be considered significant. However, it should be noted that some such sites may be good examples of activity locales and could be key indicators of local or even regional patterns of resource acquisition. Studies of seasonality may be significantly improved by considering the nature of dispersed activities and their effect on the deposition of material remains. Intensive investigations of small, single component sites—especially on a regional scale—should be encouraged even when their preservation is not of paramount importance.

8.3 RESEARCH PRIORITIES

In the future, more effort needs to be placed on specifying the archaeological residues, that is the cultural features, artifact assemblages, and spatial organization, of temporally discrete Middle Archaic occupations. In the Piedmont, for instance, Middle Archaic camps are often characterized as undifferentiated and redundant. This interpretation is based on studies demonstrating a lack of inter-site assemblage variability from surface collections (e.g., Blanton and Sassaman 1989; Sassaman 1991). It has even been suggested that large Middle Archaic sites—that is, locales with extensive low density distributions of artifacts—may be comprised of some multiple of the minimal occupation assemblage (Sassaman 1991:34). Not only is more research required on the economic function, social composition, and spatial organization of these 'minimal' occupations, but it is also possible that some intra-site occupational variability may have gone undetected in these earlier studies.

Ethnoarchaeological research suggests that the extent of short-term foraging camps is quite small, often less than 10 meters in diameter (see Cantley and Cable 2002: Chapter 8). Current site identification techniques typically employ 30-meter interval shovel tests; hence, we may be missing many single-occupation locales in our database of Middle Archaic sites, and the sites we have identified are likely the composite of numerous temporally-discrete occupations, and any evidence of divergence from the modal pattern may be getting masked at locales that were repeatedly-occupied.

As recent investigations at 9HY321 show, it may be fruitful to examine the potential for occupational variability during the Middle Archaic not by comparing inter-site artifact assemblage variability, but rather by examining intra-site artifact density distributions. As more Middle Archaic components are taken to data recovery, with systematic sub-surface samples taken from areas of both high- and low- artifact densities, we can begin to collect more culturally meaningful information on the functional differences between the occupations occurring within a locale. Such data can form the basis for researching issues such as social flexibility, changes in group composition, territoriality, and resource sharing, not only over time within the Middle Archaic sub-period, and from area to area within the South Atlantic Slope.

Phase III data recovery investigations at 9HY321 also demonstrated the utility of geomorphological studies for interpreting a site's past environment, depositional history, and formation processes. Such studies clearly have a crucial role to play in determining site use and function for Middle Archaic resources. We therefore recommend that geomorphology be strongly considered as an analytical component when developing the research design for excavation projects. It may also need to be incorporated into the field strategy for survey level investigations, especially in alluvial contexts on the Coastal Plain. Excavations at the Gregg Shoals site (9EB259) is a telling example of how deep archaeological deposits dating to the mid-Holocene may sometimes be found, often to the surprise of researchers (see Tippitt 1996). In areas that have experienced high rates of sediment deposition, deep augering may be necessary to determine the sufficiency of an excavation strategy and can serve to supplement more common site identification techniques like shovel testing.

As we proceed with more intensive research on the Middle Archaic, it may be helpful to design methodological experiments that compare the relative strengths of different archaeological survey and testing techniques. Archaeological survey investigations in Georgia typically employ 30-meter interval shovel testing. As mentioned above, this interval size may be too large to fully understand the function and use of individual occupations established by frequently-moving foraging societies. In the effort to find the best solution, it may be helpful to check how much more information may be gained regarding site spatial organization, use, function, and duration of occupation. This would be accomplished by systematically reducing the shovel-test interval size down to at least 10-meter intervals, a size that coincides with camp diameters of ethnographically documented foraging societies practicing high frequency mobility. Similar evaluations of information gain may also be conducted during archaeological testing investigations, in this case using different sizes of excavation units. The results from these experiments may vary from region to region within the state, depending on both cultural factors (e.g., frequency of occupation or re-use of locale) as well as differences in preservation potential (floodplain versus ridge-top sites).

And, finally, there needs to be greater effort placed in disseminating research findings to the archaeological community as well as the general public. We suggest that these efforts be explicated during the development stage of mitigation projects and not be left as an afterthought. The public component can be as simple as a pamphlet or booklet devoted solely to summarizing interpretations from the site, and as elaborate as a museum exhibit discussing the prehistoric occupation of the region, the site formation processes, and the nature of archaeological fieldwork. For the archaeological community, data recovery and testing results may be published in peer-reviewed journals in addition to the technical report, but it would be particularly beneficial for us to share lessons on best strategies for excavation and data analysis through a web-hosted forum. The 'wiki' format is one that can be easily updated in a modular fashion by members of the professional community, and can serve as a place to discuss and share important ideas on the management of these resources.

REFERENCES

Amick, Daniel S. and Philip J. Carr

1996 Changing Strategies of Lithic Technological Organization. In *Archaeology of the Mid-Holocene Southeast*, edited by K. E. Sassaman and D. G. Anderson, pp. 41-56. University Press Florida, Gainesville.

Anderson, David G.

1996 Approaches to modeling regional settlement in the Archaic period Southeast. In *Archaeology of the Mid-Holocene Southeast*, edited by K. E. Sassaman and D. G. Anderson, pp.157-176. University Press Florida, Gainesville.

Anderson, David G. and Glen T. Hanson

1988 Early Archaic Settlement in the Southeastern United States: A Case Study from the Savannah River Valley. *American Antiquity* 53(2):262-286.

Anderson, David G. and J.W. Joseph

1988 *Prehistory and History along the Upper Savannah River: Technical Synthesis of Cultural Resource Investigations, Richard B. Russell Multiple Resource Area, Volumes I and II*. Russell Papers. Submitted to the United States Army Corps of Engineers, Savannah District. National Park Service, Interagency Archeological Services, Atlanta.

Anderson, David G., R. Jerald Ledbetter, and Lisa O'Steen

1990 *Paleoindian Period Archaeology of Georgia*. Georgia Archaeological Research Design Papers, Number 6. Laboratory of Archaeology Series, Report Number 24. University of Georgia, Athens.

Anderson, David G., and Joseph Schuldenrein

1985 *Prehistoric Human Ecology along the Upper Savannah River. Excavations at the Rucker's Bottom, Abbeville and Bullard Site Groups*. Russell Papers 1985. National Park Service, Interagency Archaeological Services Division, Atlanta.

Andrews, R.L., J.M. Adovasio, B. Humphrey, D.C. Hyland, J.S. Gardner, and D.C. Harding

2002 Conservation and Analysis of Textile and Related Perishable Artifacts. In *Windover: Multidisciplinary Investigations of an Early Archaic Florida Cemetery*, edited by Glen H. Doran, University Press of Florida, Gainesville.

Beasley, William Dana

1972 MU100, XUK: A stratified Old Quartz Site, Murray County, Northern Georgia. M.A. Thesis, University of Georgia, Athens.

Bennardo, Giovanni and F.K. Lehman

1992 *Computational Approach to the Cognition of Space and its Linguistic Expression*. Paper presented to the Conference on the Relationship between Linguistic and Conceptual Representation, Antwerp, Belgium, November.

Benson, Robert W.
2002 *Archaeological Survey of the Proposed State Route 20 Bridge Replacement Over Walnut Creek in Henry County, Georgia*. Prepared for the Georgia Department of Transportation, Atlanta. Southeastern Archeological Services, Inc., Athens.

Benson, Robert W., David Leigh, Mary Theresa Bonhage-Freund
2005 *Data Recovery at Four Prehistoric Sites, Ocmulgee Wildlife Management Area, Pulaski County, Georgia*. Report prepared for Georgia Department of Natural Resources. Southeastern Archeological Services, Inc., Athens.

Binford, Lewis R.
1980 Willow Smoke and Dogs' Tails: Hunter-gatherer Settlement Systems and Archaeological Site Formation. *American Antiquity* 45(1):1-17.

Bland, Myles C. P., Sidney P. Johnston, and Greg C. Smith
2001 *An Intensive Cultural Resources Assessment Survey and Site Evaluations, Cherokee Brick and Tile Company Track, Bibb County, Georgia*. Environmental Services, Inc., Lithonia, Georgia.

Blanton, Dennis B.
1984 Lithic Raw Material Procurement and Use during the Morrow Mountain Phase in South Carolina. In *Lithic Resource Procurement: Proceedings from the Second Conference on Prehistoric Chert Exploitation*, edited by S. C. Vehik. Center for Archaeological Investigations Occasional Paper Number 4, Southern Illinois University, Carbondale.

Blanton, Dennis B., and Kenneth E. Sassaman
1989 Pattern and Process in the Middle Archaic Period of South Carolina. In *Studies in South Carolina Archaeology*, edited by Albert C. Goodyear III and Glen T. Hanson, pp.53-72. Anthropological Studies 9. South Carolina Institute of Archaeology and Anthropology, Columbia.

Bond, G., Showers, W., Cheseby, M., Lotti, R., Almasi, P., deMenocal, P., Priore, P., Cullen, H., Hajdas, I., Bonani, G.
1997 A Pervasive Millennial-Scale Cycle in North Atlantic Holocene and Glacial Climates. *Science* 278: 1257-1266.

Brockington, Paul
1971 Preliminary Investigation of an Early Knapping Site in Southeastern Georgia. *The South Carolina Institute of Archaeology and Anthropology Notebook* 3:23-46.

Brooks, Mark J., D.J. Colquhoun, Richard R. Pardi, Walter Newman and W.H. Abbott
1979 Preliminary Archaeological and Geological Evidence for Holocene Sea Level Fluctuations in the Lower Cooper River Valley, S.C. *The Florida Anthropologist* 32: 85-103.

Brooks, Mark J., Peter A. Stone, Donald J. Colquhoun, and Janice.G. Brown

1989 Sea Level Change, Estuarine Development, and Temporal Variability in Woodland Period Subsistence-Settlement Patterning on the Lower Coastal Plain of South Carolina. In *Studies in South Carolina Archaeology in Honor of Robert L. Stephenson*, edited by A.C. Goodyear and G.T. Hanson, pp. 91-100. Anthropological Studies 9. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

1990 A Point-Bar Site in the South Edisto River in the Upper Coastal Plain of South Carolina: Depositional History and Environmental Implications. *South Carolina Antiquities* 22(1&2):17-25.

Bullen, Ripley Pierce

1955 Stratigraphic Tests at Bluffton, Volusia County, Florida. *Florida Anthropologist* 8:1-16.

1972 The Orange Period of Peninsular Florida. In *Fiber-Tempered Pottery in the Southeastern United States and Northern Columbia: Its Origins, Context, and Significance.* edited by Ripley P. Bullen and James B. Stoltman, pp. 9-33. Florida Anthropological Society Publications 6. Gainesville.

1975 *A Guide to the Identification of Florida Projectile Points*. Florida State Museum, University of Florida, Gainesville.

Cable, John S.

1982 Organizational Variability in Piedmont Hunter-Gatherer Lithic Assemblages. In *The Haw River Sites: Archaeological Investigation at Two Stratified Sites in the North Carolina Piedmont*, assembled by Stephen R. Claggett and John S. Cable, pp. 637–688. Report R-2386. Commonwealth Associates, Jackson, Michigan.

1996 Haw River Revisited: Implications for Modeling Late Glacial and Early Holocene Hunter-Gatherer Settlement Systems in the Southeast. In *The Paleoindian and Early Archaic Southeast*, edited by David G. Anderson and Kenneth E. Sassaman, pp.107–148. University of Alabama Press, Tuscaloosa.

Cable, John S., Charles E. Cantley, and Jim S. Sexton

1978 *A Study of Prehistoric Utilization of the Inter-Riverine Piedmont: The U.S. 176-By-Pass Survey from Union to Pacolet, South Carolina*. Research Manuscript Series 131, South Carolina Institute of Archaeology and Anthropology. University of South Carolina, Columbia.

Caldwell, Joseph, R.

1951 Unpublished field notes and photographs, Lake Spring Site, Columbia County, Georgia. Manuscript on file at the Department of Anthropology, University of Georgia, Athens.

1952 The Archaeology of Eastern Georgia and South Carolina. In *Archaeology of Eastern United States*, edited by J. B. Griffin, pp.312-321. University of Chicago Press, Chicago.

1954 The Old Quartz Industry of Georgia and South Carolina. *Southern Indian Studies* 6:37-39.

1958 *Trend and Tradition in the Prehistory of the Eastern United States*. American Anthropological Association Memoir Number 88.

Calms, Alan

1968 Test Excavations at Three Late Archaic Shell-Ring Mounds on Hilton Head Island, Beaufort County, South Carolina. *Southeastern Archaeological Conference Bulletin* 8:45-48.

Calvert, P.M., D.S. Introne, and J.J. Stipp

1979 University of Miami Radiocarbon Dates XIV. *Radiocarbon* 21:107-112.

Canouts, Veletta

1976 Excavation Strategies and Results at a Shallow Lithic Site on a Piedmont Ridgetop. Paper presented at the 33rd Annual Southeastern Archaeological Conference, Tuscaloosa.

Canouts, Veletta and Albert C. Goodyear

1985 Lithic Scatters in the South Carolina Piedmont. In *Structure and Process in Southeastern Archaeology*, edited by Roy S. Dickens Jr., and H. T. Ward, pp.180-194. University of Alabama Press, Tuscaloosa.

Cantley, Charles E. and John S. Cable,

2002 Archaeological Data Recovery at Sites 38SU136/137 and 38SU141, Poinsett Electronic Combat Range, Sumter County, South Carolina. Prepared for the United States Army Corps of Engineers, Savannah District. New South Associates, Stone Mountain.

Chapman, Jefferson

1985 Archaeology and the Archaic Period in the Southern Ridge and Valley Province. In *Structure and Process in Southeastern Archaeology*, edited by Roy S. Dickens Jr., and H. T. Ward, pp.137-153. University of Alabama Press, Tuscaloosa.

Chapman, Jefferson, and Andrea Brewer Shea

1981 The Archaeological Record: Early Archaic To Contact in the Little Tennessee River Valley. *Tennessee Anthropologist* 6(1):61-84.

Claflin, William H., Jr.

1931 *The Stalling's Island Mound, Columbia County, Georgia.* Peabody Museum of American Archaeology and Ethnology Papers 14(1).

Claggett, Stephen R., and John S. Cable

1982 *The Haw River Sites: Archaeological Investigations at Two Stratified Sites in the North Carolina Piedmont*. Prepared for the United States Army Corps of Engineers, Wilmington District. Commonwealth Associates, Jackson, Michigan.

Clark, W. Z. and A. C. Zisa

1976 *Physiographic map of Georgia*. Georgia Department of Natural Resources. Georgia Geologic Survey, Atlanta.

Clausen, C.J., A.D. Cohen, C. Emiliani, J.A. Holman, and J.J. Stipp

1979 Little Salt Spring: A Unique Underwater Site. *Science* 203:609-614.

Cleland, Charles E.

1976 The Focal-Diffuse Model: An Evolutionary Perspective on the Prehistoric Cultural Adaptations of the Eastern United States. *Midcontinental Journal of Archaeology* 1: 59-76.

Coe, Joffre L.

1952 The cultural sequence of the Carolina Piedmont. In *Archaeology of Eastern United States*, edited by J. B. Griffin, pp.301-311. University of Chicago Press, Chicago.

1964 *The Formative Cultures of the Carolina Piedmont*. Transactions of the American Philosophical Society 54(5).

Colquhoun, D.J. and M.J. Brooks

1986 New Evidence from the Southeastern U.S. for Eustatic Components in the Late Holocene Sea Levels. *Geoarchaeology* 1:275-291.

Colquhoun, D.J., M.J. Brooks, W.H. Abbot, F.W. Stapor, W.S. Newman, and R.R. Pardi

1980 Principles and Problems in Establishing a Holocene Sea Level Curve for South Carolina. In *Excursions in Southeastern Geology: The Archaeology-Geology of the Georgia Coast*, edited by J.D. Howard, C.B. DePratter, and R.W. Frey, pp. 143-159. Geological Society of America, Guidebook 20.

Cressler, Charles.W.

1970 Geology and Ground-Water Resources of Floyd and Polk Counties, Georgia. Georgia. Geologic Survey Information Circular 39.

Cronin, T. M., R. Thunell, G.S., Dwyer, C. Saenger, M.E., C. Vann, and R.R. Seal II

2005 Multiproxy evidence of Holocene climate variability from estuarine sediments, eastern North America. *Paleoceanography* 20: 1-21.

Crook, Morgan R., Jr.

1990 *Rae's Creek: A Multicomponent Archaeological Site at the Fall Line along the Savannah River*. Department of Anthropology, Georgia State University, Atlanta.

2007 Prehistoric Pile Dwellers within an Emergent Ecosystem: An Archaeological Case of Hunters and Gatherers at the Mouth of the Savannah River during the Mid-Holocene. *Human Ecology* 35(2): 223-237.

Delcourt, Paul A. and Hazel R. Delcourt

1987 *Long-Term Forest Dynamics of the Temperate Zone: A Case Study of Late Quaternary Forests in Eastern North America*. Springer-Verlag, New York.

DePratter, Chester B.

1972 Report on Survey and Excavations in Clayton County Historical Jonesboro, Inc. Report 2683 on file at the Georgia Archaeological Site File, University of Georgia, Athens.

1975 The Archaic in Georgia. *Early Georgia* 3(1):1-16.

1979 Shellmound Archaic on the Georgia Coast. *South Carolina Antiquities* 11(2) 1-69.

DePratter, Chester B., and James D. Howard

1980 Indian Occupation and Geologic History of the Georgia Coast: A 5,000 Year Summary. In *Excursions in Southeastern Geology: The Archaeology-Geology of the Georgia Coast*, edited by James D. Howard, Chester B. DePratter, and Robert W. Frey, pp.1-65. Papers presented at the Annual Meeting of the Geological Society of America, Atlanta.

Dickens, Roy S.

1964 The Stone Mountain Salvage Project, DeKalb and Gwinnett Counties, Georgia: Part I. *Journal of Alabama Archaeology* 10:43-49.

Dickens, Roy S., and Linda R. Carnes

1983 Preliminary Investigations at Soapstone Ridge, DeKalb County, Georgia. *Southeastern Archaeological Conference, Bulletin* 20 & 21:81-97.

Doran, Glen H. (editor)

2002 *Windover: Multidisciplinary Investigations of an Early Archaic Florida Cemetery*. University Press of Florida, Gainesville.

Douglas, Andrew E.

1882 A Find of Ceremonial Axes in a Florida Mound. *American Antiquarian and Oriental Journal* 4:100-109.

Dragoo, Don W.

1975 Some Aspects of Eastern North American Prehistory: A Review. *American Antiquity* 41(1):3-27.

Elliott, Daniel T.

1981 *Soapstone Use in the Wallace Reservoir: A Tool for Interpreting Prehistory*. Wallace Reservoir Contributions to Knowledge Number 21, University of Georgia, Athens.

1986 *The Live Oak Soapstone Quarry, DeKalb County*. Garrow and Associates, Atlanta.

1995 *Clark Hill River Basin Survey*. LAMAR Institute Publication Number 26 and Savannah River Archaeological Research Papers 7. Occasional Papers of the Savannah River Archaeological Research Program, South Carolina Institute of Archaeology and Anthropology, University of South Carolina.

Elliott, Daniel, and Roy Doyon

1981 Archaeology and Historical Geography of the Savannah River Floodplain Near Augusta, Georgia. University of Georgia, Laboratory of Archaeology Series, Report No. 11. Athens.

Elliott, Daniel T., R. Jerald Ledbetter, and Elizabeth A. Gordon

1993 *Golf, Transportation, and the Archaic Period: Archaeology for the Bobby Jones Expressway Extension Project. Volume I*. Report prepared for Georgia Department of Transportation. Southeastern Archeological Services, Inc., Athens.

Elliott, Daniel, and Lisa O'Steen

1987 Anatomy of the Brier Creek Archaic. Paper presented at the forty-fourth annual meeting of the Southeastern Archaeological Conference, Charleston, South Carolina.

Elliot, Daniel T., and Kenneth E. Sassaman
1995 *Archaic Period Archaeology of the Georgia Coastal Plain and Coastal Zone*. Georgia Archaeological Research Design Papers, Number 11. Laboratory of Archaeology Series, Report Number 34. University of Georgia, Athens.

Ford, J.A. and Gordon Willey
1941 An Interpretation of the Prehistory of the Eastern United States. *American Anthropologist* 43(3):325-363.

Foss, John E., D. P. Wagner, and F. P. Miller
1985 *Soils of the Savannah River Valley: Richard B. Russell Multiple Resource Area, Elbert County, Georgia*. Russell Papers 1985. Interagency Archaeological Services Division, National Park Service, Atlanta.

Gardner, Paul S.
1997 The Ecological Structure and Behavioral Implication of Mast Exploration Strategies. In *People, Plants, and Landscapes: Studies in Paleoethnobotany*, edited by Kristen J. Gremillion, pp. 161-178. University of Alabama Press, Tuscaloosa.

Georgia Archaeological Site Files (GASF)
2007 Georgia Archaeological Site Files. Database accessed October 27, 2007.

Goad, Sharon I.
1979 *Chert Resources in Georgia: Archaeological and Geological Perspectives*. Laboratory of Archaeology Series, Report Number 21. University of Georgia, Athens.

Goman, M., and D. Leigh
2004 Wet early to middle Holocene conditions on the Upper Coastal Plain of North Carolina. *Quaternary Research* 61 (3) 256-264.

Goodyear, Albert C., John H. House, and Neal W. Ackerly
1979 *Laurens-Anderson: An archaeological study of the South Carolina Inter-Riverine Piedmont*. Anthropological Studies Number 4, Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Gremillion, Kristen J.
1996 The Paleoethnobotanical Record for the Mid-Holocene Southeast. In *Archaeology of the Mid-Holocene Southeast*, edited by K. E. Sassaman and D. G. Anderson, pp.99-114. University Press Florida, Gainesville.

Griffin, James B.
1952 *Archaeology of Eastern United States*. University of Chicago Press, Chicago.

1967 Eastern North American Archaeology: A Summary. *Science* 156:175-191.

Harvard, V.
1896 Drink Plants of the North American Indians. *Bulletin of the Torrey Botanical Club* 23(2):33-46.

House, John H., and David L. Ballenger

1976 *An Archaeological Survey of the Interstate 77 Route in the South Carolina Piedmont*. Research Manuscript Series 104, South Carolina Institute of Archaeology and Anthropology. University of South Carolina, Columbia.

House, John H., and Ronald W. Wogaman

1978 *Windy Ridge: A Prehistoric Site in the Inter-riverine Piedmont of South Carolina*. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Howard, J.D. and Chester B. DePratter

1980 Indian Occupation and Geologic History of the Georgia Coast. In *Excursions in Southeastern Geology: The Archaeology-Geology of the Georgia Coast*, edited by J.D. Howard, C.B. DePratter, and R.W. Frey, pp. 1-64. Geological Society of America, Guidebook 20.

Johnson, Kenneth W.

1981 The Rise and Decline of the Old Quartz Industry in the Southern Piedmont. *Early Georgia* 9(1-2):56-75.

Jones, Scott

2006 Quartz Tool Technology in the Northeast Georgia Piedmont. *Early Georgia* 34(1):27-88).

Kavasch, Barrie

1977 *Native Harvests: Botanicals and Recipes of the American Indian*. American Indian Archaeological Institute, Washington, Connecticut.

Kelly, Arthur R., Frank T. Schnell, Donald F. Smith, and Ann L. Schlosser

n.d. Explorations in Sixtoe Field, Carter's Dam, Murray County, Georgia: Seasons of 1962, 1963, and 1964. Manuscript Number 60 on file at the Laboratory of Archaeology, University of Georgia, Athens.

Kelly, John E.

1972 Archaeological Survey of the Piedmont Region in North Central South Carolina. Unpublished Master's thesis, Department of Anthropology, University of Wisconsin, Madison.

Kidder, Tristram, R.

2006 Climate change and the Archaic to Woodland transition (300-2500 ca. B.P.) in the Mississippi River basin. *American Antiquity* 71 (2): 195-231.

Kirkland, S. Dwight

1979 Preliminary Archaeological Investigations on Floyd Creek, Camden County, Georgia. *Early Georgia* 7(2):1-25.

2003a Sea Level Rise as an Explanation for a Shift in Subsistence Strategy at the Greenfield Site No. 5 (8DU5541), Duval County, Florida. Paper presented at the 2003 Symposium on Coastal Plain Archaeology, Douglas Georgia.

2003b Human Prehistory at the Sadlers Landing Site, Camden County, Georgia. *Early Georgia* 31(2):101-192.

Kowalewski, Stephen A.
1995 Large-scale Ecology in Aboriginal Eastern North America. In *Native American Interactions: Multiscalar Analyses and Interpretations in the Eastern Woodlands*, edited by M. S. Nassaney and K. E. Sassaman, pp. 147-173. The University of Tennessee Press, Knoxville.

Kuhnlein, Harriet V. and Nancy J. Turner
1991 *Traditional Plant Foods of Canadian Indigenous Peoples: Nutrition, Botany and Use*. Gordon and Breach Science Publishers, Philadelphia.

Leduc, Phil
2003 Pollen Viewer 3.2: http://www.ncdc.noaa.gov/paleo/pollen/viewer/webviewer.html.

Lehman, F. K.
1980 On the Vocabulary and Semantics of "Field" in Theravda Buddhist Society. In *Essays on Burma* (Contributions to Asian Studies 16). J.P. Ferguson (ed), E.J. Brill, Leiden. pp. 101-111.

Leigh, David, S.
2006 Terminal Pleistocene braided to meandering transition in rivers of the Southeastern USA. *Catena* 66, 155-160.

Leigh, David, S.
2008 Late Quaternary climates and river channels of the Atlantic Coastal Plain, Southeastern USA. *Geomorphology* 101(1-2): 90-108.

Leigh, David S., Pradeep Srivastava, and George A. Brook
2004 Late Pleistocene braided rivers of the Atlantic Coastal Plain, USA. *Quaternary Science Review* 23: 65-84.

Leigh, David S., and Paul A. Webb
2006 Holocene erosion, sedimentation, and stratigraphy at Raven Fork, Southern Blue Ridge Mountains, USA. *Geomorphology* 78(1-2):161-177.

Lennstrom, Heidi A. and Christine A. Hastorf
1995 Interpretation in context: sampling and analysis in paleoethnobotany. *American Antiquity* 60(4): 701–722.

Liu, K. B., and M. L. Fearn
2000 Reconstruction of prehistoric landfall frequencies of catastrophic hurricanes in northwestern Florida from lake sediment records. *Quaternary Research* 54(2):238–245.

Luedtke, Barbara E.
1992 *An Archaeologist's Guide to Chert and Flint*. Archaeological Research Tools 7. Institute of Archaeology, University of California, Los Angeles.

Marrinan, R.

1975 Ceramics, Mollusks, and Sedentism: The Late Archaic Period on the Georgia Coast. Unpublished Ph.D. dissertation, Department of Anthropology, University of Florida, Gainesville.

1976 Assessment of Subsistence Strategy Evidenced by Shell Ring Sites. *Southeastern Archaeological Conference, Bulletin* 19:61-63.

Mayewski, Paul, A., Eelco E. Rohling, J. Curt Stager, Wibjorn Karlen, Kirk A. Maasch, L. David Meeker, Eric A. Meyerson, Francoise Gasse, Shirley van Kreveld, Karin Holmgren, Julia Lee-Thorp, Gunhild Rosqvist, Frank Rack, Michael Staubwasser, Ralph R. Schneider and Eric J. Steig

2000 Holocene climate variability. *Quaternary Research* 62:243-255.

Meade, R. H., and S. W. Trimble

1974 Changes in sediment loads of the Atlantic drainage of the United States since 1900. International Association of Hydrological Sciences Publication No. 113. pp. 99-104.

Meier, Lawrence

n.d. A Preliminary Report on Research: 9-C0-42 Sibley Lithic Station, Cobb County, Georgia. The Archaeological Surveys of Cobb-Fulton Counties. Manuscript 961 on file at the Georgia Archaeological Site Files.

Milanich, Jerald T.

1994 *Archaeology of Pre-Columbian Florida*. University Press of Florida, Gainesville.

Miller, Carl F.

1949 The Lake Spring Site, Columbia County, Georgia. *American Antiquity* 15(1): 38-51.

Mitchell, Andy

1999 *The ESRI Guide to GIS Analysis*. ESRI, Redlands, California.

Moerman, Daniel E.

2004 Native American Ethnobotany: Database of Foods, Drugs, Dyes and Fibers of Native American Peoples, Derived from Plants. Electronic document,http://herb.umd.umich.edu/, accessed February 6, 2005.

National Climatic Data Center

2007 National Environmental Satellite, Data, and Information Service (NESDIS), U.S. Department of Commerce, WDC for Paleoclimatology, Borehole Data, website: http://www.ncdc.noaa.gov/paleo/borehole/borehole.html.

National Aviation and Space Administration (NASA)

2007 Goddard Space Flight Center, Global Change Master Directory, website: http://gcmd.nasa.gov/index.html.

O'Steen, Lisa D.
1983 *Early Archaic Settlement Patterns in the Wallace Reservoir: An Inner Piedmont Perspective*. Unpublished M.A. thesis, Department of Anthropology, University of Georgia, Athens.

1996 Paleoindian and Early Archaic Settlement Along the Oconee Drainage. In, *The Paleoindian and Early Archaic Southeast*, D. Anderson and K. Sassaman (eds), University of Alabama Press, Tuscaloosa, Alabama.

Otvos, E.G.
2005 Holocene aridity and storm phases, Gulf and Atlantic coasts, USA. *Quaternary Research* 63, 368-373.

Overpeck, Jonathan and Robert Webb
2000 Nonglacial rapid climate change events: past and future. Proceedings of the National Academy of Sciences of the United States of America 97 (4): 1335-1338.

Palmer, Edward
1871 Food Products of the North American Indians. *Report of the Commission for 1870*, pp. 404-428. United States Department of Agriculture, Washington, D.C.

Patton, Robert B.
2003 *Archaeological Survey and Site Testing of the Proposed SR 20 Bridge Replacement over Walnut Creek, Henry County, Georgia*. Prepared for the Georgia Department of Transportation, Atlanta. Southeastern Archaeological Services, Inc., Athens.

Pearsall, Deborah M.
2000 *Paleoethnobotany: A Handbook of Procedures, Second Edition*. Academic Press, San Diego.

Peterson, Lee Allen
1977 *Edible Wild Plants of Eastern and Central North America*. Houghton Mifflin, New York.

Piatek, Bruce J.
1994 The Tomoka Mound Complex in Northeast Florida. *Southeastern Archaeology* 13(2):109-118.

Prentice, I. C., Jolly, D., and BIOME 6000 Participants
2000 Mid-Holocene and glacial-maximum vegetation geography of the northern continents and Africa. *Journal of Biogeography* 27:507-519.

Radford, Albert E., Harry E. Ahles, and C. Ritchie Bell
1964 *Manual of the Vascular Flora of the Carolinas*. University of North Carolina Press, Chapel Hill.

Reitz, Elizabeth J. and C. Margaret Scarry
1985 *Reconstructing Historic Spanish Subsistence with an Example from Sixteenth Century Spanish Florida*. Society for Historical Archaeology, Special Publications Series 3.

Riggs, Brett H. and Larry R. Kimball
2005 *An Archaeological Survey of Blue Ridge Reservoir, Fannin County, Georgia*. Report prepared for the Tennessee Valley Authority. Appalachian State University Laboratories of Archaeological Science, Department of Anthropology, Appalachian State University, Boone, North Carolina.

Ritchie, William A.
1932 The Lamoka Lake Site. *Researches and Transactions* 7:4, New York State Archaeological Association, New York.

1944 *The Pre-Iroquoian Occupations of New York State*. Rochester Museum of Arts and Sciences, Rochester, NY.

Sassaman, Kenneth E.
1983 *Middle and Late Archaic settlement in the South Carolina Piedmont*. M.A. thesis. Department of Anthropology, University of South Carolina, Columbia.

1991 Adaptive Flexibility in the Morrow Mountain Phase of the Middle Archaic Period. *South Carolina Antiquities* 23:31-41.

1993 Early Pottery in the Southeast: Tradition and Innovation in Cooking Technology. University of Alabama Press, Tuscaloosa.

2001a Hunter-gatherers and Traditions of Resistance. In *The Archaeology of Traditions: Agency and History Before and After Columbus*, edited by T. R. Pauketat, pp. 218-236. University Press of Florida, Gainesville.

2001b Middle Eastern Archaic. In *Encyclopedia of Prehistory, Volume 6, North America*, edited by Peter N. Peregrine, pp.318-321. Kluwer Academic Press, New York.

2005 The Archaic Southeast. In *North American Archaeology*, edited by T. Pauketat and D. DiPaolo Loren, pp. 79-107. Blackwell Publishing, Oxford, UK.

Sassaman, Kenneth E., and David G. Anderson
1994 *Middle and Late Archaic Archaeological Records of South Carolina: A Synthesis for Research and Resource Management*. Council of South Carolina Professional Archaeologists.

1996 *Archaeology of the Mid-Holocene Southeast*. University Press of Florida, Gainesville.

Sassaman, K. E., Mark J. Brooks, Glen T. Hanson, David G. Anderson
1990 *Native American Prehistory of the Middle Savannah River Valley*. South Carolina Institute of Archaeology and Anthropology Savannah River Archaeological Research Papers 1. Columbia.

Sassaman, Kenneth E., Glen T. Hanson, and Tommy Charles
1988 Raw Material Procurement and the Reduction of Hunter-Gatherer Range in the Savannah River Valley. *Southeastern Archaeology* 7:79-94.

Sassaman, Kenneth and R. Jerald Ledbetter
1996 Middle and Late Archaic Architecture. In *Archaeology of the Mid-Holocene Southeast*, edited by K. E. Sassaman and D. G. Anderson, pp.3-27. University Press Florida, Gainesville.

Saunders, Rebecca, and Christopher T. Hays (editors)
2004 *Early Pottery: Technology, function, Style, and Interaction in the Lower Southeast*. University of Alabama Press, Tuscaloosa.

Scarry, C. Margaret
2003 Patterns of Wild Plant Utilization in the Prehistoric eastern Woodlands. In *People and Plants in Ancient Eastern North America*, edited by Paul E. Minnis, pp. 50-104. Smithsonian Books, Washington, D.C.

Schuldenrein, Joseph
1996 Geoarchaeology and the Mid-Holocene Landscape History of the Greater Southeast. In *Archaeology of the Mid-Holocene Southeast*, edited by K. E. Sassaman and D. G. Anderson, pp.3-27. University Press Florida, Gainesville.

Schuldenrein, Joseph and David G. Anderson
1988 Paleoenvironmental History and Archaeology in the Russell Lake Area. In *Prehistory and History along the Upper Savannah River*, edited by D. G. Anderson and J. W. Joseph, pp. 56-96. National Park Service, Interagency Archeological Services, Atlanta.

Sears, William H.
1948 What is the Archaic? *American Antiquity* 14(2):122-124.

Segovia, Antonio V.
1985 *Archaeological Geology of the Savannah River Valley and Main Tributaries in the Richard B. Russell Multiple Resource Area*. Russell Papers 1985. Interagency Archaeological Services Division, National Park Service, Atlanta.

Shah, Sudha, Thomas G. Whitley, Andrew A. Pappas, Paul E. Brockington
2008 *Phase III Data Recovery at Site 9HY321, Henry County, Georgia*. Report prepared for the Georgia Department of Transportation. Brockington & Associates, Inc., Atlanta.

Sheehan, Mark C., Donald R. Whitehead, and Stephen T. Jackson
1985 *Late Quaternary Environmental History of the Richard B. Russell Multiple Resource Area*. Russell Papers. Interagency Archaeological Service Division, National Park Service, Atlanta.

Sheen, Shaw Wen
2001 Theoretical and empirical comparison of water chemistry and karst denudation in conduit and diffuse aquifers, and implications for global karst denudation models. Unpublished Ph.D. dissertation. Department of Geology, University of Georgia, Athens.

Smith, Bruce D.
1992 *Rivers of Change: Essays on Early Agriculture in Eastern North America*. Smithsonian Institution Press, Washington, D.C.

Stanyard, William F.
n.d. *A Technical Summary of Georgia Prehistory*. TRC Garrow and Associates, www.geocities.com/wfstanyard/gach.htm.

Steinen, Karl. T.
1995 *Woodland Period Archaeology of the Georgia Coastal Plain*. Georgia Archaeological Research Design Papers, Number 12. Laboratory of Archaeology Series, Report Number 34. University of Georgia, Athens.

Stelzer, F.M.
1933 Salvaging an Aboriginal Dug-out Canoe, Cumberland Island, Georgia. Smithsonian Institution Report for 1932, Washington, D.C.

Stoltman, James B.
1966 New Radiocarbon Dates for Southeastern Fiber-Tempered Pottery. *American Antiquity* 31:872-874.

1972 Late Archaic in the Savannah River Region. In *Fiber-Tempered Pottery in the Southeastern United States*, edited by Ripley P. Bullen and James B. Stoltman, Florida Anthropologist 24(1).

1978 Temporal Models in Prehistory: An Example From Eastern North America. *Current Anthropology* 19(4):703-746.

Taylor, Richard L., and Marion F. Smith
1978 *The Report of the Intensive Survey of the Richard B. Russell Dam and Lake, Savannah River, Georgia and South Carolina*. Research Manuscript Series Number 142, Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Thomas, David H., Clark S. Larsen, George R. Clark, Chester DePratter, and Ann M. Lunsford
1979 The Anthropology of St. Catherines Island 2: The Refuge-Deptford Mortuary Complex. *Anthropological Papers of the American Museum of Natural History* 56(1).

Tippitt, V. Ann
1996 The Early to Middle Archaic transition in the Georgia-Carolina Piedmont: a view from the Gregg Shoals Site. PhD dissertation. Department of Anthropology, University of North Carolina at Chapel Hill.

Tippitt, V. Ann, and William H. Marquardt
1984 Archaeological Investigations at Gregg Shoals, a Deeply Stratified Site on the Savannah River. Archeological Services, National Park Service, Atlanta.

Ulmer, Mary and Samuel R. Beck
1951 *Cherokee Cooklore: Preparing Cherokee Foods*. Museum of the Cherokee Indian, Mary and Goingback Chiltoskey, Cherokee, North Carolina.

United States Geological Survey (USGS)
1985 *Ola, Georgia* 7.5 minute quadrangle.

University of Bristol
2005 BIOME 6000 Version 4.2: http://www.bridge.bris.ac.uk/projects/BIOME_6000

Waring, Antonio .J.
1968 The Bilbo Site, Chatham County, Georgia. In *The Waring Papers*, edited by Stephen Williams, pp. 152-197. University of Georgia Press, Athens.

Watts, W.A.
1970 The full-glacial vegetation of northwestern Georgia. *Ecology* 51:17-33.

1975 Vegetation record for the last 20,000 years from a small marsh on Lookout Mountain, northwestern Georgia. Geological Society of American Bulletin 86.

1980 Late Quaternary Vegetation History at White Pond on the Inner Coastal Plain of South Carolina. *Quaternary Research* 13:187-199.

Watts, W. A., Eric C. Grimm, and T. C. Hussey
1996 Mid-Holocene Forest History of Florida and the Coastal Plain of Georgia and South Carolina. In *Archaeology of the Mid-Holocene Southeast*, edited by K. E. Sassaman and D. G. Anderson, pp.28-40. University Press Florida, Gainesville.

Wauchope, Robert
1966 Archaeological Survey of Northern Georgia with a Test of Some Cultural Hypotheses. *Society for American Archaeology, Memoirs 21*, Salt Lake City.

Whallon, Robert
2006 Social networks and information: Non-"utilitarian" mobility among hunter-gatherers. *Journal of Anthropological Archaeology* 25:259–270.

Whatley, John S.
1984 A Proposed South Georgia Projectile Point Chronology. *The Profile* 45.

2002 An Overview of Georgia Projectile Points and Selected Cutting Tools. *Early Georgia* 30:7-133.

White, Max E.
1988 *Georgia's Indian Heritage: The Prehistoric Peoples and Historic Tribes of Georgia*. W.H. Wolfe Associates, Roswell, Georgia.

Whitley, Thomas G.
2004a *Re-thinking Accuracy and Precision in Predictive Modeling*. Paper Prepared for the Computer and Quantitative Applications in Archaeology 2004 Conference, Prato, Italy, April 18-22, 2004.

2004b *On the Frontier: Modeling Archaeological Examples of Cultural Boundaries with GIS*. Paper Prepared for the Computer and Quantitative Applications in Archaeology 2004 Conference, Prato, Italy, April 18-22, 2004

Whitley, Thomas G., and Lacey Hicks
2003 A Geographic Information Systems (GIS) Approach to Understanding Potential Prehistoric and Historic Travel Corridors. *Southeastern Archaeology* 22(1):76-90.

Whitney, James A., T.A. Paris, R.H. Carpenter, and M.E. Hartley, III
1978 Volcanic evolution of the Southern Slate Belt of Georgia and South Carolina: A Primitive Oceanic Island Arc. *Journal of Geology* 86:173-192

Williams, John W., Bryan N. Shuman, Thompson Webb III, Patrick J. Bartlein, and Phillip L. Leduc
2004 Late Quaternary vegetation dynamics in North America: scaling from taxa to biomes. *Ecological Monographs* 74(2):309-334.

Williams, J.W., B. Shuman, P. J. Bartlein, J. Whitmore, K. Gajewski, M. Sawada, T. Minckley, S. Shafer, A.E. Viau, T. Webb III, P. Anderson, L. Brubaker, C. Whitlock, and O.K. Davis
2006 *Atlas of Pollen-Vegetation-Climate Relationships for the United States and Canada*. American Association of Stratigraphic Palynologists, Contribution Series No. 43.

Williams, Mark and Victor Thompson
1999 A Guide to Georgia Indian Pottery Types. *Early Georgia* 27(1).

Wimberly, Michael C.
2004 Fire and Forest Landscapes in the Georgia Piedmont: An Assessment of Spatial Modeling Assumptions. *Ecological Modeling* 180:41-56.

Wood, W. Dean, Dan T. Elliott, Teresa P. Rudolph, and Dennis B. Blanton
1986 *Prehistory of the Richard B. Russell Reservoir: The Archaic and Woodland Periods of the Upper Savannah River: The Final Report of the Data Recovery at the Anderson and Elbert County Groups: 38An8, 38An29, 38An126, 9Eb17, 9Eb19, and 9Eb21*. Submitted to the Interagency Archaeological Services Division, National Park Service, Atlanta.

Yanovsky, Elias
1936 *Food Plants of the North American Indians*. Miscellaneous Publication No. 237. United States Department of Agriculture, Washington, D.C.

Yarnell, Richard A.
1982 Problems of Interpretation of Archaeological Plant Remains of the Eastern Woodlands. *Southeastern Archaeology* 1(1):1-7.

1993 The Importance of Native Crops during the Late Archaic and Woodland Periods. In *Foraging and Farming in the Eastern Woodlands*, edited by C. Margaret Scarry, pp.13-26. University Press of Florida, Gainesville.

Yarnell, Richard A. and M. Jean Black
1985 Temporal Trends indicated by a Survey of Archaic and Woodland Plant Food Remains from Southeastern North America. *Southeastern Archaeology* 4(2):93-106.

APPENDIX: MIDDLE ARCHAIC NRHP-ELIGIBLE ARCHAEOLOGICAL SITES IN GEORGIA

Table 1 Middle Archaic resources within NRHP-eligible multiple component archaeological sites in Georgia (as of October 2007).

Site	NRHP Status	County	InvDate	Institution	InvType*
9CN27	Listed	Clayton	1/1/2005	Georgia State University	Excavation
9GE1054	Listed	Greene		Southeastern Wildlife, Inc.	Unknown
9GE1055	Listed	Greene		Southeastern Wildlife, Inc.	Unknown
9PM205	Listed	Putnam		University of Georgia	Unknown
9GE64	Nominated	Greene	4/10/1973	University of Georgia	Survey
9GE65	Nominated	Greene	4/10/1973	University of Georgia	Survey
9MF296	Nominated	McDuffie	8/1/1991	Georgia Southern College / University	Survey
9BA18	Determined Eligible	Banks	7/1/1975	University of Georgia	Testing
9CE2335	Determined Eligible	Chattahoochee	5/1/2005	Pan American Consultants, Inc.	Survey
9CE46	Determined Eligible	Chattahoochee	9/21/2000	Pan American Consultants, Inc.	Survey
9FN175	Determined Eligible	Fannin	11/15/1993	Roswell Historical Society	Survey
9JO6	Determined Eligible	Jones	8/1/1953	Unknown	Unknown
9MG187	Determined Eligible	Morgan	5/20/1981	University of Georgia	Survey
9MG192	Determined Eligible	Morgan	5/20/1981	University of Georgia	Survey
9MG225	Determined Eligible	Morgan	12/17/1985	University of Georgia	Survey
9MG226	Determined Eligible	Morgan	12/17/1985	University of Georgia	Survey
9MG58	Determined Eligible	Morgan	8/27/1973	University of Georgia	Survey
9PI30	Determined Eligible	Pickens	6/10/1986	Southeastern Archeological Services, Inc.	Survey
9PU37	Determined Eligible	Pulaski	2/15/2004	Southeastern Archeological Services, Inc.	Survey
9PU57	Determined Eligible	Pulaski	3/15/2004	Southeastern Archeological Services, Inc.	Survey
9PU69	Determined Eligible	Pulaski	3/15/2004	Southeastern Archeological Services, Inc.	Excavation
9PU71	Determined Eligible	Pulaski	11/16/1999	Southeastern Archeological Services, Inc.	Survey
9BA75	Recommended Eligible	Banks	9/29/1993	Garrow and Associates, Inc.	Survey
9BA77	Recommended Eligible	Banks	9/29/1993	Garrow and Associates, Inc.	Survey
9BI134	Recommended Eligible	Bibb	12/9/2000	Environmental Services, Inc.	Survey
9BK207	Recommended Eligible	Burke	8/1/1993	Southeastern Archeological Services, Inc.	Survey
9BK435	Recommended Eligible	Burke	8/1/2006	R. Christopher Goodwin and Associates, Inc.	Survey
9BL129	Recommended Eligible	Baldwin	9/24/1997	Southeastern Archeological Services, Inc.	Testing
9BL69	Recommended Eligible	Baldwin	11/16/1992	Southeastern Archeological Services, Inc.	Survey
9CB81	Recommended Eligible	Columbia	11/15/1989	Southeastern Archeological Services, Inc.	Testing
9CE1516	Recommended Eligible	Chattahoochee	10/1/1998	Southern Research, Inc.	Survey
9CE1763	Recommended Eligible	Chattahoochee	1/1/1999	Southern Research, Inc.	Testing
9CE1844	Recommended Eligible	Chattahoochee	2/1/2001	Southern Research, Inc.	Survey
9CE20	Recommended Eligible	Chattahoochee	7/29/1957	Columbus Museum	Unknown
9CE4	Recommended Eligible	Chattahoochee	9/21/1995	Southeastern Archeological Services, Inc.	Unknown
9CE469	Recommended Eligible	Chattahoochee	6/18/1993	Pan American Consultants, Inc.	Survey
9CE47	Recommended Eligible	Chattahoochee	1/1/1958	Columbus Museum	Unknown

Table 1 Middle Archaic resources within NRHP-eligible multiple component archaeological sites in Georgia (continued).

Site	NRHP Status	County	InvDate	Institution	InvType*
9CE496	Recommended Eligible	Chattahoochee	6/25/1993	Pan American Consultants, Inc.	Survey
9CE52	Recommended Eligible	Chattahoochee	7/29/1996	Pan American Consultants, Inc.	Survey
9CE636	Recommended Eligible	Chattahoochee	3/18/1994	Pan American Consultants, Inc.	Survey
9CE65	Recommended Eligible	Chattahoochee	3/1/2001	Southern Research, Inc.	Survey
9CE66	Recommended Eligible	Chattahoochee	10/1/1998	Southern Research, Inc.	Survey
9CE875	Recommended Eligible	Chattahoochee	7/29/1996	Pan American Consultants, Inc.	Survey
9CE900	Recommended Eligible	Chattahoochee	7/29/1996	Pan American Consultants, Inc.	Survey
9CG11	Recommended Eligible	Chattooga		Soil Systems, Inc.	Unknown
9CH872	Recommended Eligible	Chatham	5/15/1997	Brockington and Associates, Inc.	Survey
9CK1133	Recommended Eligible	Cherokee	12/5/2002	R. S. Webb and Associates, Inc.	Excavation
9CK1142	Recommended Eligible	Cherokee	12/5/2002	R. S. Webb and Associates, Inc.	Excavation
9CK739	Recommended Eligible	Cherokee	11/1/1992	R. Christopher Goodwin and Associates, Inc.	Survey
9CK741	Recommended Eligible	Cherokee	11/1/1992	R. Christopher Goodwin and Associates, Inc.	Survey
9CN66	Recommended Eligible	Clayton	1/1/2005	LAMAR Institute	Survey
9CO121	Recommended Eligible	Cobb		University of Georgia	Testing
9CO127	Recommended Eligible	Cobb	2/2/2004	R. S. Webb and Associates, Inc.	Survey
9CO534	Recommended Eligible	Cobb	1/4/1998	R. Christopher Goodwin and Associates, Inc.	Survey
9CP10	Recommended Eligible	Crisp	2/28/1977	University of Georgia	Testing
9CP11	Recommended Eligible	Crisp	2/28/1977	University of Georgia	Testing
9CP52	Recommended Eligible	Crisp	1/1/1972	Brockington and Associates, Inc.	Excavation
9CW120	Recommended Eligible	Coweta	8/12/1998	R. S. Webb and Associates, Inc.	Survey
9CW158	Recommended Eligible	Coweta	10/1/2001	Garrow and Associates, Inc.	Survey
9CY162	Recommended Eligible	Clay	2/20/2001	Southeastern Archeological Services, Inc.	Survey
9CY163	Recommended Eligible	Clay	2/20/2001	Southeastern Archeological Services, Inc.	Survey
9CY75	Recommended Eligible	Clay	4/1/1980	United States Corps of Engineers	Unknown
9CY76	Recommended Eligible	Clay	4/1/1980	United States Corps of Engineers	Unknown
9DO66	Recommended Eligible	Douglas	8/3/1995	Southern Research, Inc.	Excavation
9DR3	Recommended Eligible	Decatur	6/18/1979	Cleveland Museum of Natural History	Testing
9DR70	Recommended Eligible	Decatur	7/18/1978	Cleveland Museum of Natural History	Testing
9DU40	Recommended Eligible	Dougherty	2/18/1997	Brockington and Associates, Inc.	Survey
9DW60	Recommended Eligible	Dawson	9/16/1988	United States Forest Service	Survey
9EB176	Recommended Eligible	Elbert	6/28/2001	Pan American Consultants, Inc.	Survey
9EB35	Recommended Eligible	Elbert		Private Collection	Unknown
9EB692	Recommended Eligible	Elbert	6/28/2001	Pan American Consultants, Inc.	Survey
9ER116	Recommended Eligible	Early	2/27/1980	Cleveland Museum of Natural History	Unknown
9FL114	Recommended Eligible	Floyd		Soil Systems, Inc.	Unknown
9FL141	Recommended Eligible	Floyd	11/12/1979	Soil Systems, Inc.	Survey

Table 1Middle Archaic resources within NRHP-eligible multiple component archaeological sites in Georgia (continued).

Site	NRHP Status	County	InvDate	Institution	InvType*
9FL204	Recommended Eligible	Floyd	1/15/1993	Brockington and Associates, Inc.	Testing
9FL56	Recommended Eligible	Floyd	1/2/1973	Georgia State University	Unknown
9FN145	Recommended Eligible	Fannin		Roswell Historical Society	Survey
9FN15	Recommended Eligible	Fannin	1/1/1983	United States Forest Service	Testing
9FN151	Recommended Eligible	Fannin	10/22/1993	Roswell Historical Society	Survey
9FN154	Recommended Eligible	Fannin	10/23/1994	Roswell Historical Society	Survey
9FN164	Recommended Eligible	Fannin	10/28/1993	Roswell Historical Society	Survey
9FN221	Recommended Eligible	Fannin	1/5/1994	Roswell Historical Society	Survey
9FN223	Recommended Eligible	Fannin	1/22/1994	Roswell Historical Society	Survey
9FN34	Recommended Eligible	Fannin	9/29/1999	Georgia Department of Transportation	Survey
9FO100	Recommended Eligible	Forsyth	1/1/1972	Unknown	Unknown
9FO301	Recommended Eligible	Forsyth	5/1/1996	R. S. Webb and Associates, Inc.	Survey
9FU141	Recommended Eligible	Fulton	10/31/1979	Cobb County Archaeological Survey	Unknown
9FY116	Recommended Eligible	Fayette	8/14/1993	New South Associates, Inc.	Survey
9FY166	Recommended Eligible	Fayette	3/30/2006	Edward-Pitman Environmental, Inc.	Survey
9FY86	Recommended Eligible	Fayette	8/14/1993	New South Associates, Inc.	Survey
9GE1000	Recommended Eligible	Greene		University of Georgia	Unknown
9GE1011	Recommended Eligible	Greene		University of Georgia	Unknown
9GE1012	Recommended Eligible	Greene		University of Georgia	Unknown
9GE1013	Recommended Eligible	Greene		University of Georgia	Unknown
9GE1023	Recommended Eligible	Greene		University of Georgia	Unknown
9GE1079	Recommended Eligible	Greene		University of Georgia	Unknown
9GE1646	Recommended Eligible	Greene	1/1/1999	University of Georgia	Survey
9GE1896	Recommended Eligible	Greene	8/1/2001	Southeastern Archeological Services, Inc.	Survey
9GE2703	Recommended Eligible	Greene	8/16/2007	Brockington and Associates, Inc.	Survey
9GE949	Recommended Eligible	Greene	1/1/1978	University of Georgia	Unknown
9GI63	Recommended Eligible	Gilmer	9/8/1992	Southeastern Archeological Services, Inc.	Survey
9GW224	Recommended Eligible	Gwinnett	9/1/2000	R. S. Webb and Associates, Inc.	Testing
9GW476	Recommended Eligible	Gwinnett	9/1/2000	R. S. Webb and Associates, Inc.	Testing
9HE25	Recommended Eligible	Heard		University of Georgia	Survey
9HE92	Recommended Eligible	Heard		University of Georgia	Unknown
9HE95	Recommended Eligible	Heard		University of Georgia	Unknown
9HK56	Recommended Eligible	Hancock	7/26/1984	Garrow and Associates, Inc.	Unknown
9HK72	Recommended Eligible	Hancock	7/26/1984	Garrow and Associates, Inc.	Testing
9HL133	Recommended Eligible	Hall	1/1/1972	Unknown	Unknown
9HL164	Recommended Eligible	Hall	1/1/1972	Unknown	Unknown
9HL293	Recommended Eligible	Hall	1/1/1972	Unknown	Unknown

Table 1 Middle Archaic resources within NRHP-eligible multiple component archaeological sites in Georgia (continued).

Site	NRHP Status	County	InvDate	Institution	InvType*
9HL347	Recommended Eligible	Hall	1/1/1972	Unknown	Unknown
9HL364	Recommended Eligible	Hall	1/1/1972	Unknown	Unknown
9HL366	Recommended Eligible	Hall	1/1/1972	Unknown	Unknown
9HL51	Recommended Eligible	Hall	1/1/1972	Unknown	Unknown
9HL74	Recommended Eligible	Hall	1/1/1972	Unknown	Unknown
9HM155	Recommended Eligible	Habersham	4/2/1990	Webb Diversified Consultants, Inc.	Survey
9HT26	Recommended Eligible	Houston	6/30/2004	Ellis Environmental Group	Testing
9HT31	Recommended Eligible	Houston	6/30/2004	Ellis Environmental Group	Testing
9HT46	Recommended Eligible	Houston	9/15/2005	URS Corporation	Testing
9HT63	Recommended Eligible	Houston	6/25/1987	Garrow and Associates, Inc.	Survey
9HT8	Recommended Eligible	Houston	5/26/2004	URS Corporation	Survey
9HY328	Recommended Eligible	Henry	6/13/2003	R. S. Webb and Associates, Inc.	Testing
9HY36	Recommended Eligible	Henry	2/25/1994	Law Environmental, Inc.	Excavation
9HY38	Recommended Eligible	Henry	2/25/1994	Law Environmental, Inc.	Excavation
9HY39	Recommended Eligible	Henry	2/25/1994	Law Environmental, Inc.	Excavation
9HY95	Recommended Eligible	Henry	10/2/1992	Garrow and Associates, Inc.	Survey
9HY98	Recommended Eligible	Henry	10/2/1992	Garrow and Associates, Inc.	Survey
9JO262	Recommended Eligible	Jones	3/1/1999	United States Fish and Wildlife Service	Survey
9JO264	Recommended Eligible	Jones	3/1/1999	United States Fish and Wildlife Service	Survey
9JO29	Recommended Eligible	Jones		Garrow and Associates, Inc.	Unknown
9JO31	Recommended Eligible	Jones		Garrow and Associates, Inc.	Survey
9LC208	Recommended Eligible	Lincoln	6/11/1996	Pan American Consultants, Inc.	Survey
9LC32	Recommended Eligible	Lincoln		Unknown	Unknown
9LC343	Recommended Eligible	Lincoln	5/22/1996	Pan American Consultants, Inc.	Survey
9LC366	Recommended Eligible	Lincoln	5/28/1996	Pan American Consultants, Inc.	Survey
9LC499	Recommended Eligible	Lincoln	7/25/1996	Pan American Consultants, Inc.	Survey
9LC516	Recommended Eligible	Lincoln	7/27/1996	Pan American Consultants, Inc.	Survey
9LC578	Recommended Eligible	Lincoln	8/10/1996	Pan American Consultants, Inc.	Survey
9LC582	Recommended Eligible	Lincoln	8/10/1996	Pan American Consultants, Inc.	Survey
9LC888	Recommended Eligible	Lincoln	8/4/1997	Pan American Consultants, Inc.	Survey
9LC891	Recommended Eligible	Lincoln	8/4/1997	Pan American Consultants, Inc.	Survey
9LC896	Recommended Eligible	Lincoln	8/4/1997	Pan American Consultants, Inc.	Survey
9LE116	Recommended Eligible	Lee	5/27/2002	LAMAR Institute	Survey
9LW90	Recommended Eligible	Lowndes	11/4/2004		Survey
9LW91	Recommended Eligible	Lowndes	11/4/2004		Survey
9ME1062	Recommended Eligible	Muscogee	4/10/2000	Southern Research, Inc.	Survey
9ME292	Recommended Eligible	Muscogee	8/1/1994	Brockington and Associates, Inc.	Survey

Table 1 Middle Archaic resources within NRHP-eligible multiple component archaeological sites in Georgia (continued).

Site	NRHP Status	County	InvDate	Institution	InvType*
9ME351	Recommended Eligible	Muscogee	8/1/1994	Brockington and Associates, Inc.	Testing
9ME359	Recommended Eligible	Muscogee	8/1/1994	Brockington and Associates, Inc.	Testing
9ME38	Recommended Eligible	Muscogee	8/1/1994	Brockington and Associates, Inc.	Testing
9ME45	Recommended Eligible	Muscogee	8/1/1994	Brockington and Associates, Inc.	Survey
9ME893	Recommended Eligible	Muscogee	1/1/2001	Southern Research, Inc.	Survey
9MF27	Recommended Eligible	McDuffie	1/1/1981	New World Research, Inc.	Unknown
9MF38	Recommended Eligible	McDuffie	12/21/1995	Southeastern Archeological Services, Inc.	Testing
9MF872	Recommended Eligible	McDuffie	6/1/1999	Pan American Consultants, Inc.	Survey
9MF876	Recommended Eligible	McDuffie	8/11/1999	Pan American Consultants, Inc.	Survey
9MG254	Recommended Eligible	Morgan	3/18/1991	University of Georgia	Survey
9MG55	Recommended Eligible	Morgan	8/23/1973	University of Georgia	Survey
9MO342	Recommended Eligible	Monroe		Georgia Power Company	Unknown
9MO362	Recommended Eligible	Monroe		Georgia Power Company	Unknown
9MO409	Recommended Eligible	Monroe	11/8/1988	Southeastern Archeological Services, Inc.	Unknown
9NE221	Recommended Eligible	Newton	3/1/2005	R. S. Webb and Associates, Inc.	Testing
9NE63	Recommended Eligible	Newton	1/1/1989	Webb Diversified Consultants, Inc.	Survey
9NE70	Recommended Eligible	Newton	6/20/1989	Webb Diversified Consultants, Inc.	Survey
9OC110	Recommended Eligible	Oconee		University of Georgia	Survey
9OC204	Recommended Eligible	Oconee		University of Georgia	Survey
9OC207	Recommended Eligible	Oconee		LAMAR Institute	Survey
9OC218	Recommended Eligible	Oconee	1/1/1986	Georgia Power Company	Testing
9OC25	Recommended Eligible	Oconee		Unknown	Unknown
9PA178	Recommended Eligible	Paulding	8/27/2002	New South Associates, Inc.	Unknown
9PA419	Recommended Eligible	Paulding	2/1/2007	R. S. Webb and Associates, Inc.	Survey
9PA442	Recommended Eligible	Paulding	10/10/2005	Garrow and Associates, Inc.	Survey
9PI153	Recommended Eligible	Pickens	6/2/2003	R. S. Webb and Associates, Inc.	Survey
9PM1133	Recommended Eligible	Putnam	2/25/1998	United States Forest Service	Survey
9PM122	Recommended Eligible	Putnam	3/1/1996	Brockington and Associates, Inc.	Survey
9PM1460	Recommended Eligible	Putnam	7/28/2005	University of Georgia	Survey
9PM201	Recommended Eligible	Putnam		University of Georgia	Unknown
9PM207	Recommended Eligible	Putnam	12/1/1977	University of Georgia	Unknown
9PM592	Recommended Eligible	Putnam		University of Georgia	Unknown
9PM593	Recommended Eligible	Putnam		University of Georgia	Survey
9PM594	Recommended Eligible	Putnam		University of Georgia	Survey
9PM595	Recommended Eligible	Putnam		University of Georgia	Survey
9PM596	Recommended Eligible	Putnam		University of Georgia	Survey
9PM598	Recommended Eligible	Putnam		University of Georgia	Survey

Table 1 Middle Archaic resources within NRHP-eligible multiple component archaeological sites in Georgia (continued).

Site	NRHP Status	County	InvDate	Institution	InvType*
9PM601	Recommended Eligible	Putnam		University of Georgia	Survey
9PM825	Recommended Eligible	Putnam	9/23/1987	Southeastern Archeological Services, Inc.	Survey
9PM996	Recommended Eligible	Putnam	1/1/1979	LAMAR Institute	Survey
9PU44	Recommended Eligible	Pulaski	4/16/1996	Michael Baker, Jr. Inc.	Testing
9PU92	Recommended Eligible	Pulaski	4/23/2004	Georgia Department of Natural Resources	Survey
9RA34	Recommended Eligible	Rabun	8/15/1983	United States Forest Service	Testing
9RA39	Recommended Eligible	Rabun	8/1/1991	United States Forest Service	Survey
9RH48	Recommended Eligible	Randolph	3/2/2001	Southeastern Archeological Services, Inc.	Testing
9RI135	Recommended Eligible	Richmond	11/26/1989	Southeastern Archeological Services, Inc.	Testing
9RI158	Recommended Eligible	Richmond	6/1/2002	R. S. Webb and Associates, Inc.	Survey
9RI187	Recommended Eligible	Richmond		Garrow and Associates, Inc.	Unknown
9RI251	Recommended Eligible	Richmond	11/14/1989	Southeastern Archeological Services, Inc.	Testing
9RI327	Recommended Eligible	Richmond	1/1/1988	Georgia State University	Excavation
9RI489	Recommended Eligible	Richmond	7/15/1996	Pan American Consultants, Inc.	Testing
9RI72	Recommended Eligible	Richmond	1/1/1980	Southeastern Wildlife, Inc.	Unknown
9RI77	Recommended Eligible	Richmond	4/1/1980	Southeastern Wildlife, Inc.	Unknown
9RO53	Recommended Eligible	Rockdale	10/19/1993	Garrow and Associates, Inc.	Survey
9SE119	Recommended Eligible	Seminole	2/9/1980	Cleveland Museum of Natural History	Testing
9SH23	Recommended Eligible	Schley	7/21/1999	New South Associates, Inc.	Survey
9SN165	Recommended Eligible	Screven	8/16/1994	New South Associates, Inc.	Survey
9ST34	Recommended Eligible	Stephens		United States Forest Service	Unknown
9SU10	Recommended Eligible	Sumter	7/20/1999	New South Associates, Inc.	Survey
9TE22	Recommended Eligible	Terrell	4/6/1993	R. Christopher Goodwin and Associates, Inc.	Survey
9TF139	Recommended Eligible	Telfair	6/30/1999	Southeastern Archeological Services, Inc.	Testing
9TN67	Recommended Eligible	Turner	4/20/1993	Garrow and Associates, Inc.	Survey
9TO108	Recommended Eligible	Towns	5/14/1997	New South Associates, Inc.	Survey
9TO68	Recommended Eligible	Towns	4/8/1992	United States Forest Service	Survey
9TP103	Recommended Eligible	Troup	9/1/1978	University of Georgia	Unknown
9TP1031	Recommended Eligible	Troup	7/17/2006	Southern Research, Inc.	Survey
9TP122	Recommended Eligible	Troup	9/11/1978	University of Georgia	Survey
9TP234	Recommended Eligible	Troup	1/1/1979	University of Georgia	Unknown
9TP276	Recommended Eligible	Troup	1/1/1979	University of Georgia	Unknown
9TP294	Recommended Eligible	Troup	1/1/1979	University of Georgia	Survey
9TP295	Recommended Eligible	Troup	1/1/1979	University of Georgia	Unknown
9TP351	Recommended Eligible	Troup	1/1/1979	University of Georgia	Survey
9TP359	Recommended Eligible	Troup	1/1/1979	University of Georgia	Unknown
9TP366	Recommended Eligible	Troup	1/1/1979	University of Georgia	Survey

Table 1 Middle Archaic resources within NRHP-eligible multiple component archaeological sites in Georgia (continued).

Site	NRHP Status	County	InvDate	Institution	InvType*
9TP395	Recommended Eligible	Troup	1/1/1979	University of Georgia	Survey
9TP397	Recommended Eligible	Troup	1/1/1979	University of Georgia	Unknown
9TP442	Recommended Eligible	Troup	1/1/1979	University of Georgia	Survey
9TP481	Recommended Eligible	Troup	1/1/1972	Unknown	Survey
9TP484	Recommended Eligible	Troup	1/1/1972	Unknown	Survey
9TP504	Recommended Eligible	Troup	1/1/1972	Unknown	Survey
9TP505	Recommended Eligible	Troup	1/1/1972	Unknown	Survey
9TP509	Recommended Eligible	Troup	1/1/1972	Unknown	Survey
9TP521	Recommended Eligible	Troup	1/1/1972	Unknown	Survey
9TP525	Recommended Eligible	Troup	1/1/1972	Unknown	Survey
9TP536	Recommended Eligible	Troup	1/1/1972	Unknown	Survey
9TP566	Recommended Eligible	Troup	1/1/1972	Unknown	Survey
9TP573	Recommended Eligible	Troup	1/1/1972	Unknown	Survey
9TP699	Recommended Eligible	Troup	1/1/1972	Unknown	Survey
9TP70	Recommended Eligible	Troup	1/1/1979	University of Georgia	Testing
9TP717	Recommended Eligible	Troup	1/1/1972	Unknown	Survey
9TP74	Recommended Eligible	Troup	1/1/1979	University of Georgia	Testing
9TP807	Recommended Eligible	Troup	1/1/1972	Unknown	Survey
9TR12	Recommended Eligible	Taylor	1/4/1974	Unknown	Survey
9UN11	Recommended Eligible	Union	9/1/1977	United States Forest Service	Testing
9UN15	Recommended Eligible	Union	12/1/1978	University of Georgia	Survey
9UN269	Recommended Eligible	Union	1/9/1997	New South Associates, Inc.	Survey
9WG35	Recommended Eligible	Washington		Garrow and Associates, Inc.	Unknown
9WH83	Recommended Eligible	White	2/25/1996	United States Forest Service	Testing
9WN119	Recommended Eligible	Walton	5/11/2000	Georgia Department of Transportation	Survey
9WS347	Recommended Eligible	Wilkes	8/27/2001	Southeastern Archeological Services, Inc.	Survey
9WS51	Recommended Eligible	Wilkes	12/18/1997	Southeastern Archeological Services, Inc.	Survey
* Investigation level data in the GASF is not always accurate					

Table 2 Single component NRHP-eligible Middle Archaic sites in Georgia (as of October 2007).

Site	NRHP Status	County	InvDate	Institution	InvType*
9MF295	Nominated	McDuffie	8/1/1991	Georgia Southern College / University	Survey
9MG196	Determined Eligible	Morgan	5/20/1981	University of Georgia	Survey
9MI83	Determined Eligible	Miller	11/28/1979	Unknown	Survey
9PI32	Determined Eligible	Pickens	6/9/1986	Southeastern Archeological Services, Inc.	Survey
9BI129	Recommended Eligible	Bibb	12/9/2000	Environmental Services, Incorporated	Testing
9BN422	Recommended Eligible	Bryan	6/5/2002	Pan American Consultants, Incorporated	Survey
9CB295	Recommended Eligible	Columbia	10/20/1998	Pan American Consultants, Incorporated	Survey
9CG24	Recommended Eligible	Chattooga	1/7/1992	Pan American Consultants, Incorporated	Survey
9CG33	Recommended Eligible	Chattooga	1/1/1984	United States Forest Service	Survey
9CG95	Recommended Eligible	Chattooga	8/19/1993	United States Forest Service	Survey
9CK1146	Recommended Eligible	Cherokee	6/1/2001	R. S. Webb and Associates, Incorporated	Testing
9CK731	Recommended Eligible	Cherokee	11/1/1992	R. Christopher Goodwin and Associates, Inc.	Survey
9FL61	Recommended Eligible	Floyd	1/2/1973	Georgia State University	Unknown
9FN317	Recommended Eligible	Fannin	8/1/1993	United States Forest Service	Survey
9FU436	Recommended Eligible	Fulton	7/19/2002	New South Associates, Incorporated	Survey
9GO125	Recommended Eligible	Gordon	1/7/1992	Pan American Consultants, Incorporated	Survey
9HL155	Recommended Eligible	Hall	1/1/1972	Unknown	Unknown
9HL91	Recommended Eligible	Hall	1/1/1972	Unknown	Survey
9HY321	Recommended Eligible	Henry	4/4/2003	Southeastern Archeological Services, Inc.	Testing
9HY97	Recommended Eligible	Henry	10/2/1992	Garrow and Associates, Incorporated	Survey
9JO60	Recommended Eligible	Jones	4/1/1986	United States Forest Service	Survey
9LC162	Recommended Eligible	Lincoln		Pan American Consultants, Incorporated	Survey
9LC355	Recommended Eligible	Lincoln	5/26/1996	Pan American Consultants, Incorporated	Survey
9LC356	Recommended Eligible	Lincoln	5/27/1996	Pan American Consultants, Incorporated	Survey
9LC598	Recommended Eligible	Lincoln	8/15/1996	Pan American Consultants, Incorporated	Survey
9LC738	Recommended Eligible	Lincoln	8/4/1997	Pan American Consultants, Incorporated	Survey
9LE31	Recommended Eligible	Lee	11/15/1994	Georgia Department of Transportation	Survey
9LE52	Recommended Eligible	Lee	3/28/1997	Brockington and Associates, Incorporated	Survey
9PI152	Recommended Eligible	Pickens	6/2/2003	R. S. Webb and Associates, Incorporated	Survey
9PM1094	Recommended Eligible	Putnam	10/16/1991	United States Forest Service	Survey
9PM123	Recommended Eligible	Putnam	3/1/1996	Brockington and Associates, Incorporated	Survey
9PM124	Recommended Eligible	Putnam	3/1/1996	Brockington and Associates, Incorporated	Survey
9RA32	Recommended Eligible	Rabun	8/15/1983	United States Forest Service	Testing
9TO208	Recommended Eligible	Towns	4/6/1999	Georgia Department of Transportation	Testing
9TP486	Recommended Eligible	Troup	1/1/1972	Unknown	Survey

* Investigation level data in the GASF is not always accurate