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ARCHAIC PERIOD ARCHAEOLOGY OF NORTH GEORGIA

WILLIAM F. STANYARD

ATHENS
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ARCHAIC PERIOD ARCHAEOLOGY OF NORTHERN GEORGIA

By

William F. Stanyard
TRC Garrow Associates, Inc.

April 2003

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I. INTRODUCTION

The Archaic period is an archaeological construct referring to a specific set of social, economic, political, and material conditions that were created, maintained, and transformed by people that inhabited the Southeast between 10,000 and 3,000 years ago. A significant body of archaeological data concerning this long and complex era of north Georgia prehistory has been accumulating for more than a century, providing a reservoir of knowledge with the potential to provide valuable insight into the nature of social change and human experience.

A summary of Archaic period research in northern Georgia is presented in the chapters that follow. Fourteen research questions devised by Crook (1986: 21-22) form the common heuristic thread woven throughout this research design series, and each is addressed below within a framework that provides a robust perspective on the history of the region's ancient inhabitants. It is hoped that the holistic approach taken here will demonstrate the importance of identifying Archaic period archaeological resources, and bolster the resolve to preserve them. Other concerns addressed in this document focus on site preservation issues and future research; both are discussed throughout the text, and in Chapter VIII, which provides specific replies to the 14 questions referenced above.

This study is one of several historic contexts that are part of a comprehensive process developed to provide protection for Georgia's cultural resources. That process is detailed in *A Vision for the Future, the Georgia Historic Preservation Plan* prepared by the Georgia Department of Natural Resources (1989). In terms of the overall strategy for cultural resource planning in Georgia, this volume addresses Study Units 9, 10, 11, and 12, as defined by Morgan R. Crook in the appropriately titled *A Strategy for Cultural Resource Planning in Georgia* (Crook 1986). Chronologically, these study units encompass the Archaic period; geographically, emphasis is placed on developments that occurred in Georgia north of the Fall Line (Figure 1).

THE ARCHAIC PERIOD: CONCEPTUAL AND CHRONOLOGICAL ISSUES

In the eastern United States, the concept of an Archaic period was originally developed to differentiate between those prehistoric American Indian groups that produced ceramic pottery, and those that did not. One of the earliest definitions of the Archaic "pattern" occurred in the nomenclature of the Midwestern Taxonomic Method, which was developed in the 1930's to describe specific technological manifestations that appeared in the archaeological record as a suite of co-occurring technological traits (McKern 1939). In this hierarchical, dendritic scheme of classification, the Archaic pattern was a general term that was simply defined as one that lacked pottery but contained artifacts manufactured from ground slate.

At the time, the Archaic pattern was widely (and correctly) thought to have preceded the Woodland and Mississippian patterns by most researchers. However, that presumption was primarily based on thought grounded in social evolutionary theory, not direct archaeological

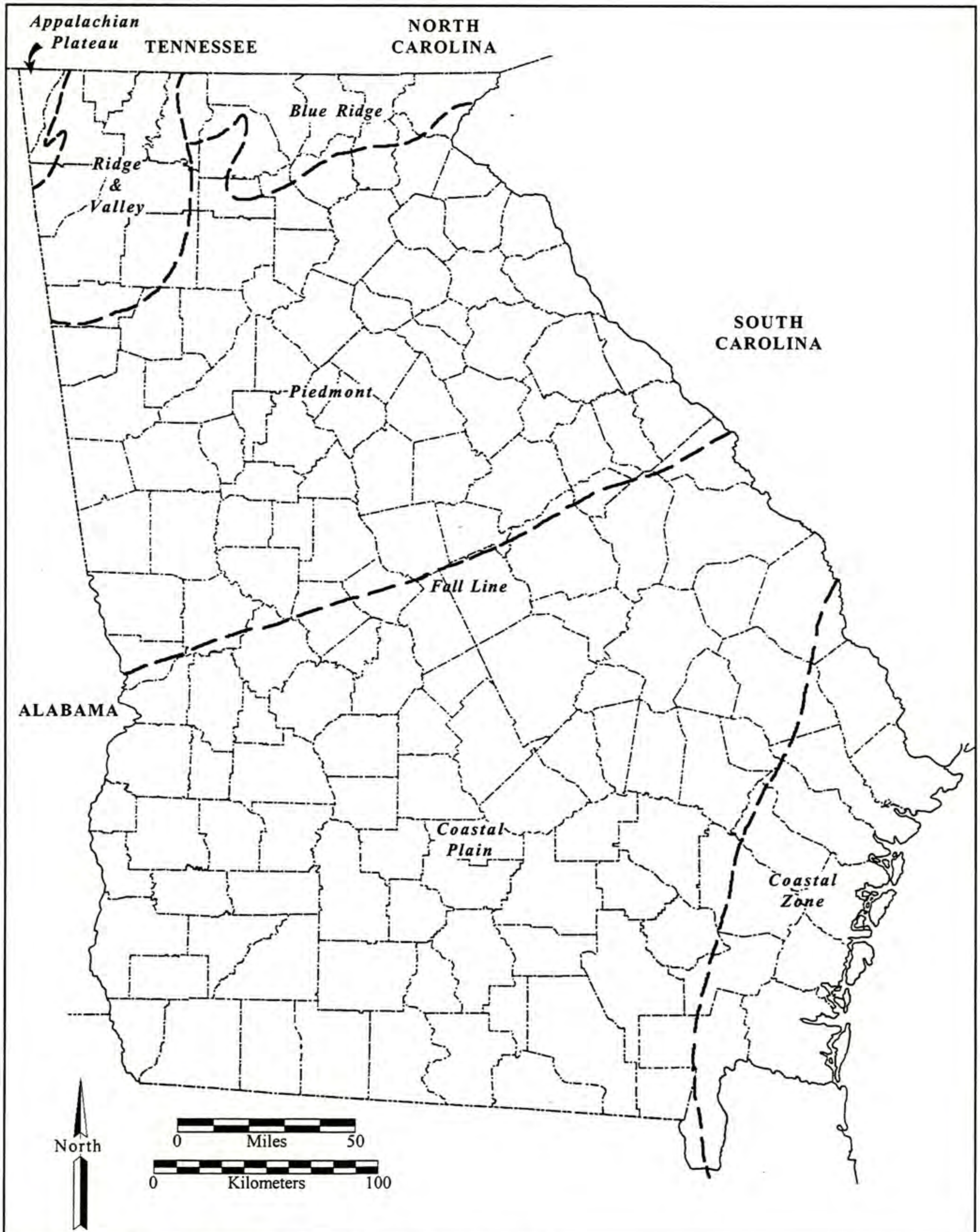

Figure 1. Map Illustrating the Physiographic Provinces of Georgia.

evidence. Emphasis was placed on describing the traits belonging to specific archaeological components, foci, aspects, and phases (to use the lexicon of the Midwestern Taxonomic Method) by acknowledging the presence and absence of specific artifact classes.

Many scholars of the era believed that the evolutionary stage of a given society could be determined by an assessment of their overall technological achievements because economic and political potential was perceived to be directly correlated with technological complexity (e.g.; White 1949). Since specific politico-economic behavior was an apriori assumption attached to particular evolutionary stages, it was generally believed that the evolutionary status of the society under scrutiny could be determined by trait analysis; the broader issues with regard to settlement, subsistence, and political organization were considered more or less solved. In general, adherents to this approach found that it was unnecessary to conduct rigorous studies of artifact assemblages to understand these aspects of prehistoric cultures.

Technological innovation, and by inference, political and economic "evolution", was explained in terms of diffusion and acculturation (e.g.; McKern 1937; Lewis and Kneburg 1941). In North America, the impetus for culture change was perceived to have primarily come from Mesoamerica, as people and ideas were funneled through the Mississippi River Valley from that region (Caldwell 1958; Ford and Willey 1941, Jennings 1952; Waring and Holder 1945).

James A. Ford and Gordon R. Willey (1941) recognized five stages of cultural development caused by these influxes; the earliest being the Archaic stage. Arguably, the most notable early usage of the Archaic concept in the eastern United States was adopted by William A. Ritchie to describe the extensive aceramic components that were appearing at sites excavated throughout eastern New York state in the 1930's and 1940s (Ritchie 1932, 1936, 1944). These components lacked ceramics, and contained a variety of stemmed projectile points, formal lithic tools, and ground stone implements. Sites similar in nature also occurred in the Southeast, and during the 1940's, the term Archaic became widely adopted in reference to these sites types (Fairbanks 1942; Lewis and Kneburg 1959).

Ford and Willey (1941) did not suggest a date for the beginning of the Archaic stage in eastern North America, but they estimated its transition to the next stage (Burial Mound I) between approximately A.D. 750 and A.D. 1100 (Trigger 1989:193). According to this scheme, the earliest manifestation of the Burial Mound I stage (Early Woodland in today's terminology) appeared near Baton Rouge, Louisiana around A.D. 750. The transition occurred in succession as ideas, information, and people moved northward along the Mississippi Valley, and reaching the Grand Rapids, Michigan, area by about A.D. 1100.

Allowing time for the Burial Mound I traits to be introduced to, and become accepted by, populations living east of the Mississippi, Ford and Willey's (1941) chronology infers that the Archaic stage in the eastern woodlands lingered until well after A.D. 750. This places the transition from Archaic to Burial Mound I near the end of the first millennium A.D. in areas east of the Mississippi Valley. We now estimate the end of the Archaic to have occurred 2,000 years earlier, sometime around 1,000 B.C.

As an example of this perception of chronology, Ritchie estimated that the later Archaic cultures of New York, Lamoka for example, inhabited the region around A.D. 300 (Ritchie 1944; see Trigger 1989: 194). It should be noted, however, that these estimations were made prior to the advent of absolute dating techniques developed soon after the conclusion of World War II (Libby 1955). In general, the relative chronological positions of the recognized "stages" were correctly sorted out before radiocarbon carbon dating became available. In the Southeast, this was primarily accomplished through ceramic seriation (Phillips, Ford, and Griffin 1951).

Assemblages were inferred to be attributable to the Archaic stage if they lacked ceramics. Relative chronological positions of components placed within the Archaic were also being studied, but that issue did not receive nearly the attention that was afforded ceramic seriation.

One of the first major studies of Archaic chronology in the Southeast was conducted by Joffre Coe (1964). It was based on stylistic differences between projectile point assemblages recovered from the stratified Doerschuk, Gaston, and Hardaway sites during the 1940's and 1950's. These Piedmont North Carolina locations yielded important data on time-transgressive changes in projectile point morphology that helped define the chronological sequence for the entire Archaic period in the Southeast. As is evident in the chapters that follow, Coe's 1964 publication is still considered a valuable resource for archaeologists working in Georgia, Tennessee, and the Carolinas.

In the late 1940's, W. W. Taylor (1948) published the seminal work *A Study of Archaeology*. Taylor argued that archaeological method and theory, as practiced by the majority of New World archaeologists, was becoming moribund. With the possible exception of researchers such as Clyde Kluckholn (1940), J. W. Bennett (1943), Gordon Willey (1948), and a few others, Taylor believed that important anthropological issues were not and could not be addressed using the kind of data being gathered and disseminated by most archaeologists of that era.

Taylor called for a more stringent field methods and the collection of all types of data that could reflect when, how, and why a site was utilized. He was an advocate of quantifying and proveniencing all classes of artifacts found at a site, including organic remains, which were often overlooked. The importance of collecting environmental and historical information to augment the artifact data was also recognized by Taylor to be an important aspect of archaeological research.

With that arsenal of information, it was argued, one could discern inter-site patterns of behavior that indicate how sites were utilized. Taylor reasoned that once the functional nature of each site type for a particular group or society was determined, and consequently integrated into a pattern of settlement and subsistence, insight into the nature of their culture could be obtained. He viewed this data in the same vein as ethnohistoric and ethnographic accounts, and envisioned one day achieving the goal of understanding human behavior and the nature of culture change (see Trigger 1989: 277-278).

The reasoned approach outlined in theoretical terms by Taylor became widespread practice by the early 1960's, as the neo-evolutionary principles founded within ecological anthropology, particularly the work of Julian Steward, rose to prominence (Caldwell 1959; Steward 1955). The tenets of Steward's multi-evolutionary approach were grounded in the idea that cultural traditions were primarily a result of the interaction between human groups and their environment. This relationship was, and in some circles still remains, viewed and spoken of in terms of adaptive responses to external stimuli.

The processualists, a term afforded to the "new" archaeological paradigm of the late 1950's, 1960's, and early 1970's devoted to discovering the deductive nomothetic principles of human behavior through "scientific" means, viewed the archaeological record in terms of rational and efficient responses to environmental conditions (e.g.; Binford 1962; 1965; Flannery 1968; see Caldwell 1959). Studies were focused on the relationship between technology, environment, and the "success" of social units in terms of their viability within particular environmental parameters. In order to understand this process, it was essential that environmental, paleoenvironmental, and subsistence data be collected and analyzed. This multidisciplinary approach to archaeology is now a standard in the profession.

As data obtained through multidisciplinary studies grew, it became clear that the concept of a monolithic Archaic period did not express the variation in adaptations that were apparent in the archaeological record. However, the culture historical practice of classificatory splitting was too particularistic to convey the processualist message of continuous evolutionary change through underlying nomothetic causes. The Archaic period was eventually partitioned into three subperiods—early, middle, and late—in order to denote major differences in adaptive responses. These differences were primarily related to archaeologically recognizable technological innovations that have subsequently been associated with subsistence, settlement, and social organization to varying degrees of specificity.

Since the 1970's, various other theoretical approaches have been utilized to examine and interpret the archaeological record. To some extent, most of these "postprocessualist" perspectives—contextualism, marxism, neo-marxism, and neo-historicism, for example—view past and present societies as the historical outcome of dynamic, symbol-laden, political interactions between individuals. Land-use practices, subsistence choices, and technological innovation are still vitally important aspects of the archaeological data base when interpreted from these perspectives, since they provide insight into these more elusive interpretive areas when social theoretical principles are applied.

It is still standard practice to use the tripartite Archaic scheme as a descriptive device regardless of one's theoretical perspective, because it chronologically frames the basic data sets that are used by all (technology, subsistence, and settlement). This document is organized in a manner that takes advantage of this descriptive element by addressing the subject matter in terms of Early, Middle, and Late Archaic developments. A chapter is devoted to each period, and they include a comprehensive, integrated discussion that encompasses the subjects included within the scope of this research design series.

INFORMATION SOURCES

The information provided in this document is derived from a variety of sources. The Georgia Archaeological Site File was accessed to gain information on site content and site distributions.

The site file web pages were also consulted to review the number and nature of archaeological reports that have been submitted to that office. The data on those web pages were used to locate potential information sources that are relevant to this research. Additional resources include documents and manuscripts housed at the Georgia Archaeological Site File, the TRC Garrow, Inc., corporate library in Atlanta, and the author's personal library.

A significant portion of the data presented in subsequent chapters was obtained from survey, testing, and data recovery investigations associated with reservoir projects conducted along five major drainages that occur in north Georgia; they provide a comprehensive east-west coverage of the region (Figure 2). Although some of those projects may have had different research goals and strategies, emphasis was placed on those information sources because they offer an intensive view of historical developments along specific segments of the major drainage systems within the study area. A broader perspective was gained by including information derived from regional syntheses, theoretical commentaries, and many individual site reports.

ORGANIZATION

This document continues with Chapter II, which discusses the Archaic period environment of north Georgia. Chapter III provides a brief review of the Paleoindian period; it provides historical context for the chapters that follow. A comprehensive analysis of the Early, Middle, and Late Archaic periods is presented in Chapters IV-VI. Chapter VII contains information concerning the database, as well as a commentary on site distributions. Chapter VIII addresses the 14 research questions that have been designed for this series, and provides recommendations with regard to future research. A list of references cited in the text follow Chapter VIII, and concludes the report.

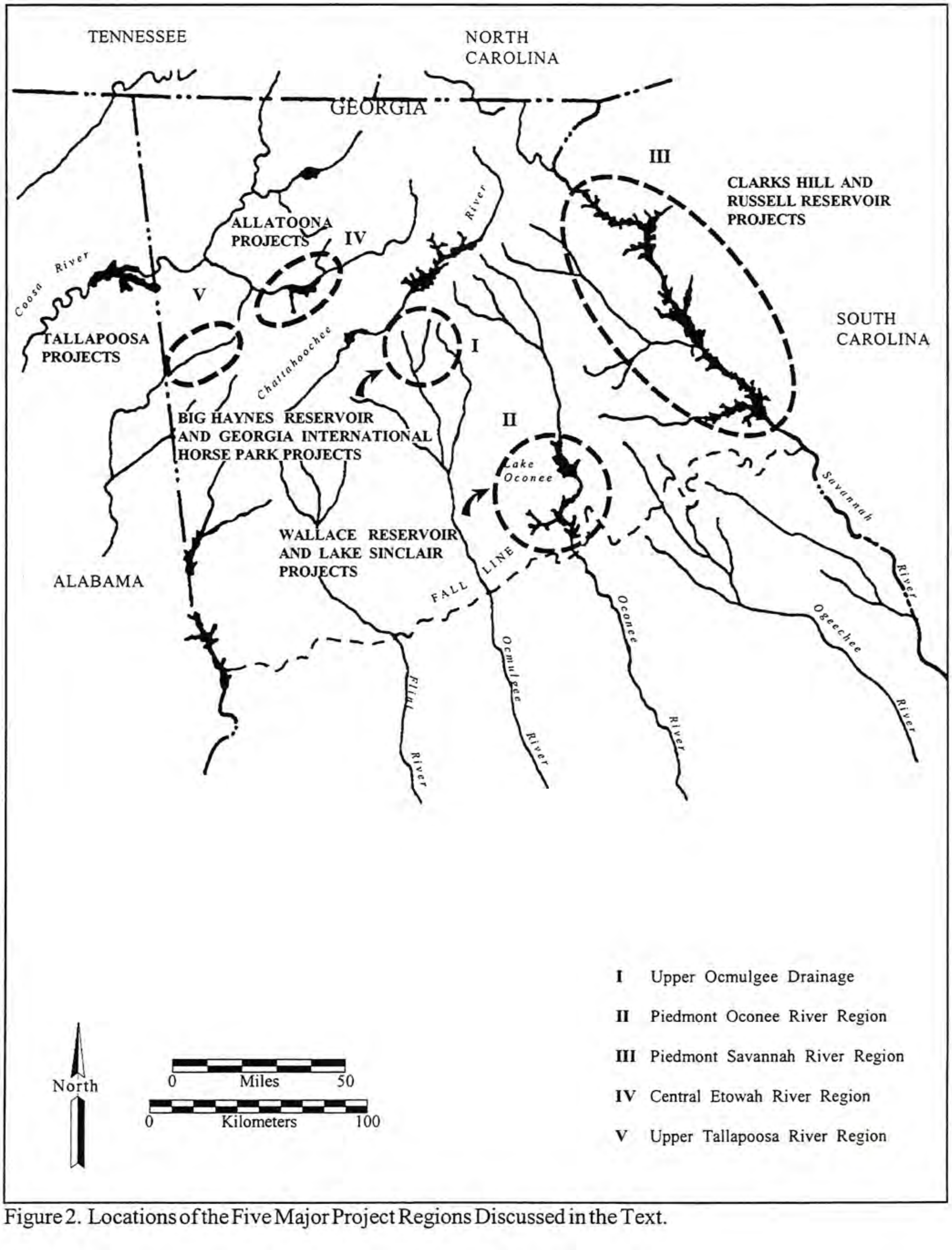

Figure 2. Locations of the Five Major Project Regions Discussed in the Text.

II. THE ARCHAIC PERIOD ENVIRONMENT

The abundant natural resources of northern Georgia have attracted humans to the region since at least 11,000 B.P. (Anderson et al. 1990). The nature and availability of natural resources is an integral part of decision making with regard to all realms of hunter-gather society, past and present. Therefore, it is important to obtain a perspective on regional environmental conditions prior to exploring archaeological and anthropological issues concerning the resident Archaic populations.

PHYSIOGRAPHY

Only an instant of geological time has passed since humans first occupied the region, and dramatic physiographic changes to the landscape have not occurred since that time. The same large-scale geological formations that affect demography, industry, and travel in modern times, also influenced the way in which prehistoric groups settled the landscape and exploited their environment.

Geographers and geologists commonly refer to the four broad geological phenomena that exist in the region as physiographic provinces (e.g.; Clark and Zisa 1976; Fenneman 1938; Hodler and Schretter 1986; La Forge 1925).

These provinces occur on a macro-regional scale, and extend well beyond Georgia's current political boundary. Three of the four provinces within the purview of this study—the Piedmont, Ridge and Valley, and Blue Ridge—span relatively large segments of Georgia north of the Fall Line; a fourth—the Appalachian Plateau—is restricted to the extreme northwestern portion of the state (see Figure 1).

A large portion of north Georgia, approximately 19,000-km^2, is situated within the Piedmont province. This province exhibits moderate relief; but steep narrow valleys also occur in areas bisected by drainages (Fenneman 1938). The Blue Ridge province is located in the northeastern section of the state. It encompasses approximately 3,000-km^2, and consists of mountain plateaus and steep intermountain valleys. The Ridge and Valley is an approximately 4,300-km^2 region of northwestern Georgia that exhibits steep, narrow ridges and broad valleys. Lookout Mountain and Sand Mountain are two large plateaus that cut across the extreme northwestern corner of the state. Collectively, these mountains and their associated valleys comprise the Georgia portion of the Appalachian Plateau province. This area encompasses approximately 40-km^2.

At a higher level of resolution, there are many smaller-scale physiographic differences within provinces that undoubtedly affected the way in which prehistoric populations utilized the landscape. These localized phenomena are termed "districts;" they are primarily classified according to topographic similarities that separate them from surrounding areas within the larger province (Hodler and Schretter 1986).

GEOLOGY

Bedrock Geology

The bedrock geology of the Piedmont and Blue Ridge physiographic provinces consists of igneous and metamorphic rock associated with the Precambrian and early Paleozoic eras. The Piedmont is comprised primarily of biotite gneiss and schist (Clark and Zisa 1976; Hodler and Schretter 1986:12-13). Granite and granite gneiss form the basement material in many areas of the Piedmont as well. Mica schist, mafic and ultramafic rock, and metamorphosed volcanic rock also occur throughout the province, but much more infrequently. Small bands of quartzite appear in the southern portion of the Piedmont, and in the extreme northeastern section of that province. Quartzites and schist co-occur in a narrow band where the Piedmont interfaces with the Ridge and Valley province in northwest Georgia.

The Blue Ridge is primarily comprised of mica schist and biotite gneiss/schist (Clark and Zisa 1976; Hodler and Schretter 1986:12-13). A narrow band of mafic and ultramafic rock spans the extreme southeastern edge of the province, while very small quartzite formations occur in the far northwestern and northeastern sections. Quartzites and schist co-occur in a serpentine band that winds in a southwest-northeast direction through the approximate center of the Blue Ridge. This area is considered an extension of the Piedmont province, and is part of the Hightower-Jasper Ridges District as defined by Hodler and Schretter (1986:16-17).

Bedrock in the Ridge and Valley is composed of strongly folded and faulted Paleozoic sedimentary rock (Clark and Zisa 1976; Goad 1979; Hodler and Schretter 1986:12-13). It consists of sandstone, shale, limestone, dolomite, and chert; these formations occur at various places throughout the province. Quartzite, which is metamorphosed, also occurs in some areas. Differential weathering between the limestone group (limestone, shale, and dolomite) and the sandstones and cherts has created the parallel ridges and valleys that characterize the Ridge and Valley province. Sandstone and chert, which are more resistant to erosion, cap many of the ridges, while the softer shales and limestones occur on the ridge slopes and valley floors.

Finally, the Appalachian Plateau is composed of shale and limestone that were deposited during the later portion of the Paleozoic era. Lookout Mountain and Sand Mountain are comprised of these formations, and the two valleys associated with this province—Lookout and Chickamauga—are formed from the weathering of this parent material.

Lithology: Prehistoric Raw Material Sources

Archaic period societies utilized a wide variety of media—wood, bone, shell, antler, leather, and at the end of the period, ceramics—to exploit their physical surroundings and convey social, economic, and political messages. Hunting, fishing, food processing, hide processing, and construction technology were, however, primarily based on a lithic industry. Stone tools were used in these endeavors as hand-held items, or in a composite fashion that was reliant on stone as a working edge.

Because of its importance, many decisions regarding movement, trade, and political relationships were based, at least in part, on the distribution, availability, and control of lithic raw material. This is especially so for rock used in the chipped stone industry, the most important of which are chert, metavolcanics, and quartz. Access to and the control of soapstone sources also became very important by the Late Archaic era. A perspective on the geographical distribution of these and other important lithic materials is, therefore, essential for understanding Archaic period social developments in north Georgia.

Chert. Chert was extensively used to manufacture chipped stone tools. The two primary sources for high-quality chert, which was sought out and conserved to varying degrees by Archaic period populations, occur in the Ridge and Valley and Coastal Plain physiographic provinces. Although the Coastal Plain province is outside the purview of this study in geographical terms, Coastal Plain chert was an important raw material source for some Archaic groups that lived in the Piedmont, especially those occupying the eastern and southeastern sections of that province. Prehistoric quarries and natural deposits of Piedmont chert have been discovered in a few places within the upper Oconee River drainage, and sources apparently also occur in the Carolinas and Virginia (see Ledbetter et al. 1981; O'Steen 2000; O'Steen et al 1986). The extent to which it was used remains unclear, however, as Piedmont chert has gone unrecognized in many cases (see below).

Ridge and Valley Chert. This material occurs in discontinuous beds and as nodules throughout the Ridge and Valley. Chert beds and nodules can be found within limestone and sandstone formations in ridge top and ridge slope settings. Redeposited nodules can be obtained from river, stream, and creek beds, as well as upland environs. Sources are most numerous in the northwestern portion of the Georgia Ridge and Valley, while it occurs less frequently in the southeastern section of the province (Goad 1979:18).

Five primary chert types are recognized in the region: Armuchee chert, the Conasauga Formation, Fort Payne chert, the Knox group, and the Newala Limestone (Goad 1979: Table III). Prehistoric people intensively utilized cherts associated with the Knox and Fort Payne groups. These superior quality cherts can be obtained in many areas of the province, and occur in archaeological contexts throughout the Ridge and Valley, Blue Ridge, and Piedmont provinces.

The cherts associated with the Newala Limestone, which are of high quality as well, were also used for manufacturing chipped stone tools. However, this material is very similar to that associated with the Knox group, and it is difficult to distinguish between the two types. Therefore, the degree to which Newala chert was utilized cannot be determined at this time.

Although Armuchee chert also makes a serviceable raw material for chipped stone tool manufacture, it is not widely available. This situation likely accounts for its rather limited occurrence in prehistoric assemblages.

Conasauga Formation chert does not appear to have been utilized to any large extent. The reason for this situation is unclear, as Goad (1979:13) reports that it is "locally abundant and easily worked."

Coastal Plain Chert. In contrast to the situation in the Ridge and Valley province, the unconsolidated sediments of the Coastal Plain province do not harbor large quantities of chert. It occurs as blocks, boulders, nodules, and cobbles in many localized areas, however (Goad 1979). In terms of Archaic period groups living in Georgia north of the Fall Line, the Flint River and Barnwell formations were the two primary sources of Coastal Plain chert (Goodyear and Charles 1984; Sassaman et al. 1988; Upchurch 1984).

Localized chert outcrops associated with the Flint River Formation occur in the Central Savannah River Valley in the middle portion of the Coastal Plain (Goodyear and Charles 1984). These exposures were utilized by prehistoric populations, and are known as the "Allendale quarry cluster" (Goodyear and Charles 1984). This cluster includes material known as Brier Creek chert, which outcrops along Brier Creek and its tributaries in Burke and Screven counties (Elliott et al. 1994). Allendale cherts are generally of excellent quality, and as the term implies, were actively quarried by prehistoric populations. In southwestern Georgia, Flint River Formation chert occurs as large boulder outcrops along the Flint River in Dougherty, Baker, Mitchell, and Decatur counties (Goad 1979). Material from that region is also high-quality.

Barnwell Formation chert occurs imbedded in limestone, or as nodules and blocks along ridges, rivers, and streams (Goad 1979). This grainy, fossiliferous material is serviceable, but is generally poorer in quality than chert from the Flint River Formation. Sources of Barnwell chert that were possibly exploited by Archaic period groups primarily occur in the upper Coastal Plain and Fall Line region of the Savannah River drainage (Goad 1979;Sassaman 1993b; Sassaman et al. 1988).

Piedmont Chert. Metamorphosed material that formed as hydrothermal opaline silicate occurs in places across the Piedmont from Georgia, through the Carolinas, and into Virginia. Researchers working in the Carolinas and Virginia sometimes refer to this material as jasper (O'Steen 2000:4). In Georgia, and probably elsewhere, it is mistakenly classified as Coastal Plain chert because of its resemblance to the Brier Creek variety of that material. Therefore, this lithic source often goes undetected.

The most notable sources of Piedmont chert in Georgia occur within the Oconee River drainage, in Oglethorpe, Oconee, and Morgan counties (Ledbetter et al. 1981; O'Steen et al. 1986). Chert from that area is grainy, but some examples are comparable in quality to Coastal Plain material.

The only known prehistoric components that contain significant quantities of Piedmont chert occur within the Wallace Reservoir study region, near the above-mentioned sources. Data from the Wallace Reservoir Archaeological Survey suggested that local chert was utilized as early as the late Paleoindian period, but it culminated soon afterwards during the Early Archaic (O'Steen et al. 1986; O'Steen 1996). Now that more archaeologists are aware of this source, it is anticipated that Piedmont chert will be identified in later contexts as well.

Metavolcanics. Metavolcanic rock is fine-grained metamorphic material that exhibits a conchoidal fracture when struck; it includes rock classified as andesite, argillite, dacite, rhyolite, slate, and tuff (House and Ballenger 1976; Jones 2000; Overstreet and Bell 1965; Sassaman and Anderson 1993; and Wood et al. 1986). Outcrops of this material are primarily localized within the Carolina Slate Belt, which occurs along the Fall Zone in Georgia, South Carolina, and North Carolina.

Metavolcanic rock was used to manufacture chipped stone tools throughout the prehistoric era, but it was especially important to Late Archaic groups inhabiting Piedmont and Fall Zone locales. Metavolcanic sources in north Georgia include pyroclastic metadacite, which is know to occur in Lincoln County (Jones 2000:86-87). Major sources of this material that are known to have been used during prehistoric times occur in the Uwharrie and Morrow Mountain regions of North Carolina (Daniel and Butler 1991; House and Wogaman 1978). Metavolcanic artifacts manufactured from material originating from these sources have been found throughout the Carolinas; it may have been transported into parts of north Georgia, but no conclusive evidence of this has thus far been reported.

Quartz. Quartz was a significant source of raw material throughout the prehistoric era. It occurs in veins, as river cobbles, and as angular blocks within the soil matrix throughout the Piedmont and Blue Ridge provinces; quartz does not occur within the sedimentary deposits of the Ridge and Valley and Appalachian Plateau. In terms of knapping, the fracturing qualities of quartz range from excellent to very poor. A wide variety of bifacial, unifacial, and flake tools were manufactured from quartz during the entire Archaic period; in cobble form it was also used in such capacities as hammering, grinding, and indirect heating.

Soapstone. Soapstone is a metamorphosed talc that occurs in many areas of the Piedmont throughout the eastern United States (Elliott 1981:4). Its soft texture makes it ideal for carving, and this material was used to manufacture a wide variety of items during the prehistoric era. Soapstone was used to produce utilitarian, decorative, and ceremonial items such as bowls, perforated cooking slabs, pipes, and pendants. Access to this material appears to have been a major issue in power and gender relationships among Late Archaic groups inhabiting the Georgia Piedmont, Fall Zone, and upper-to-middle Coastal Plain region of the Savannah River Valley (e.g. Elliott and Sassaman 1995; Sassaman 1993a; Stanyard 1997).

In Georgia, soapstone outcrops have been identified in 24 counties (Elliott 1981). Five are located in the Blue Ridge province, and 19 are located within the Piedmont province. Outcrops exhibiting evidence that they have been quarried during the prehistoric period occur in 12 counties; eleven are situated in the Piedmont province, and one (Union County) is located in the Blue Ridge province.

Amphibolite. Often referred to as greenstone, along with metabasalt this material was used to manufacture celts and other types of ground stone tools (Jones 2000). Amphibolite and metabasalt occur within the Carolina Slate Belt; Jones (2000:81-85) has identified sources in Wilkes County, Georgia.

Diabase. This volcanic rock occurs in dikes that are often associated with beds of metavolcanic material in the Piedmont (Jones 2000:98). Although diabase can be fashioned into formal chipped stone tools, it was most often used for groundstone implements. The term diabase is often mistakenly used to describe metadacite and other types of metavolcanic rock that prehistoric people used to manufacture chipped stone implements. One source of diabase in north Georgia occurs in Oglethorpe County (Jones 2000:97-100).

HYDROLOGY

Northern Georgia exhibits a vast network of waterways that provided prehistoric populations with fish, freshwater, and the ability to travel, trade, and exchange information over large distances[1]. Eight major drainage basins occur within the state's boundaries (Figure 3). The Chattahoochee, Coosa, Flint, and Tallapoosa basins direct water towards the Gulf of Mexico, while water in the Ocmulgee, Oconee, Ogeechee, and Savannah catchments eventually flows into the Atlantic Ocean. All but one of the large rivers—the Savannah—have their origins in north Georgia. The Savannah River originates from sources in the Blue Ridge physiographic province of Georgia (Tugaloo River) and the Piedmont province (Seneca River) of South Carolina (Hodler and Schretter 1986).

ECOLOGY

Humans responded to the differences between Late Pleistocene and post-Pleistocene (Holocene) landscapes by developing unique social, technological, and economic institutions to meet specific biological, social, and political needs. The way in which people choose to meet those needs are manifest in their material culture, and the differences between Late Pleistocene (Paleoindian) and Early-Middle Holocene (Archaic) populations are apparent in the archaeological record.

When humans initially arrived and settled the region, during the Paleoindian period, the environment of north Georgia was much different than exists today. Fueled by world-wide climatic changes, the parkland and spruce/pine boreal forests that became established during the Pleistocene were being replaced by floral and faunal species associated with the oak-hickory forest regime; many of these species are commonly observed in the area at present (Watts 1975; Whitehead 1973). This ecological transition began at the onset of the Late Wisconsin glacial period (ca. 13,000 B.C.) and it was essentially complete by the advent of the Archaic period, which archaeologists place at approximately 8,000 B.C.

Average temperatures in the last full glacial period (ca. 23,000–13,000 B.C.), which presumably predated the initial arrival of humans into north Georgia, were considerably cooler than at present. At that time, the study area was covered by a northern coniferous forest dominated by

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[1] Many of the smaller rivers and larger creeks that are no longer navigable were open for boat travel during the prehistoric and early historic eras. They have been rendered unnavigable by siltation due to increased runoff, the effects of large-scale water management efforts, and other activities associated with agriculture and industrialization.

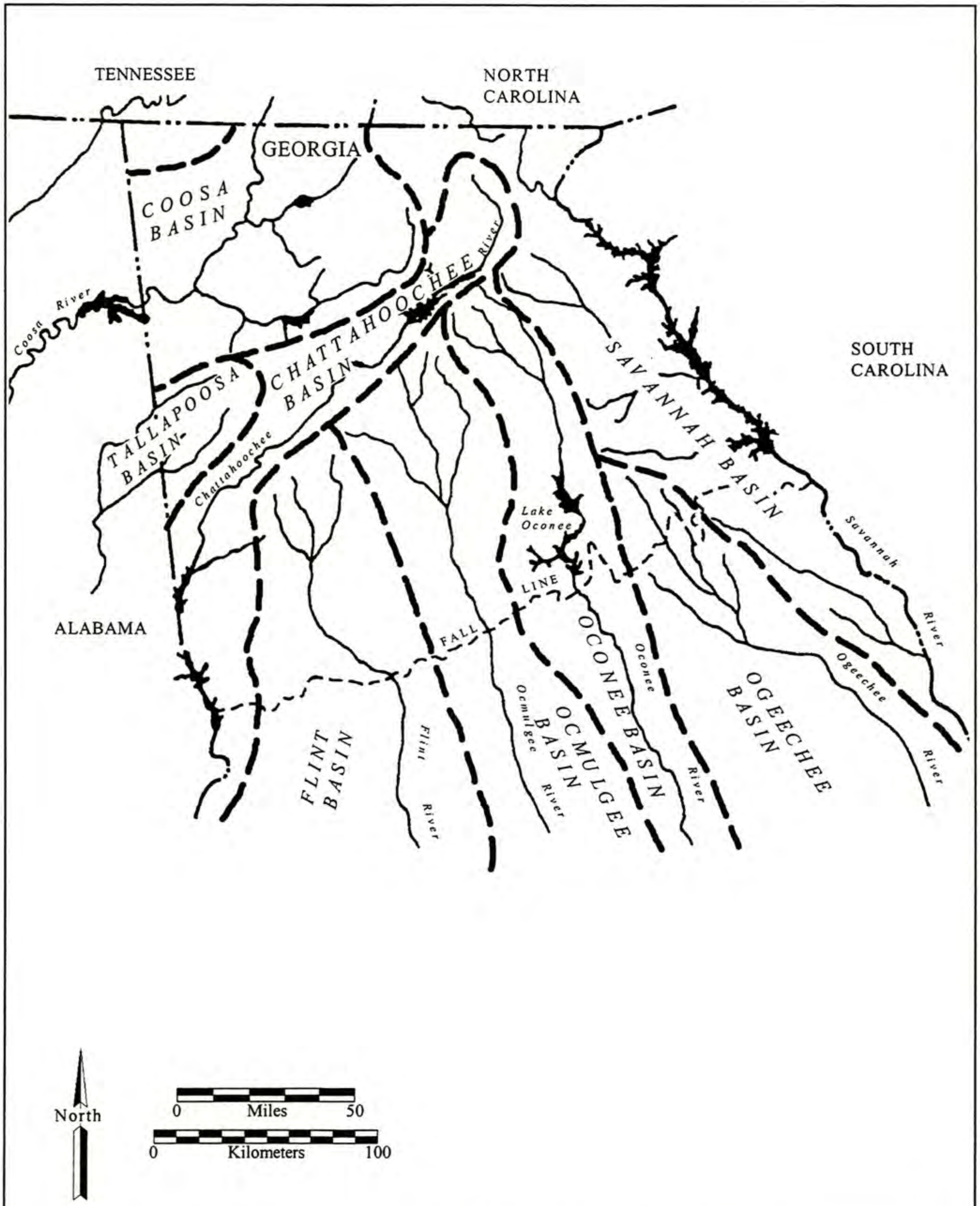

Figure 3. Map of Georgia Illustrating the Locations of the Eight Major Drainage Basins.

pines and spruce (Delcourt and Delcourt 1983; Whitehead 1973). In the Late Wisconsin glacial period (ca. 15,000–10,000 B.P.), when humans apparently first arrived in north Georgia, the climate gradually warmed and precipitation increased. These trends occurred in conjunction with northern hardwoods replacing pine and spruce as the dominant overstory species.

This was a dynamic period with regard to faunal communities as well. Many large mammals (megafauna) that inhabited Georgia during the Paleoindian period (mastodon, giant ground sloth, horse, camel, saber-toothed tiger, etc.) became extinct by 10,000 B.P. These species were victims of a mass North American extinction that involved 33 genera of large mammals adapted to the cold, dry environmental systems of the Late Pleistocene (Martin 1984:361). The retreat of the Laurentide Ice Sheet, which induced a warmer, wetter climate throughout North America, in conjunction with the arrival of humans heavily reliant on many of these animals for subsistence, are considered major factors in the demise of the megafauna (Martin 1984).

The period encompassing the Early Archaic and all but the very end of the Middle Archaic period (ca. 10,000 to 5000 B.P.) is often referred to as the Altithermal, a term used to describe an era of continued warming and decreased precipitation (Bryson et al. 1970; Watts 1975). Many archaeologists continue to hold this view despite paleovegetation evidence that the southern Appalachians and the northern Coastal Plain was warmer and *wetter* (Delcourt and Delcourt 1985:20). Recent geomorphological data collected on paleochannels of the middle Ogeechee River in southeast Georgia, as well as evidence obtained from a natural levee along the Broad River near Columbia, South Carolina, supports this contention (Leigh 1998; Leigh and Feeney 1995). If the climate was warmer and wetter, there are many implications with regard to our perception of resource structure and availability, as well the nature of Middle Holocene settlement and subsistence. This issue will be revisited in Chapters V and VII.

The dominant overstory vegetation during the Middle Holocene was oak-hickory forest (Watts 1975; Whitehead 1973). Since about 5000 B.P., which correlates fairly closely with the date ascribed to the advent of the Late Archaic, the climate has cooled slightly; whether precipitation has slightly increased or decreased depends on the which of the above scenerios is correct. The evolution to modern conditions preceding settlement by non-American Indians involved a decrease in the oak-hickory stands and an increase in the number of pines (Wharton 1977).

During the Archaic, faunal resources were much the same as exist today, although the numbers of individuals and the geographical distribution of species have been greatly altered. Between ca. 8000 B.C. and A.D. 1540, the animals of northern Georgia included bear, white-tailed deer, elk, bison, wolf, fox, bobcat, beaver, rabbit, mink, skunk, opossum, raccoon, and a variety of reptiles and amphibians. Migratory waterfowl, turkey, dove, quail, and bald and golden eagles were plentiful. Aquatic resources such as freshwater mussel and a variety of fish were also present (Golley 1962).

Many animals that were plentiful during the Archaic period have been eradicated from the area over the last four centuries. These include bison, elk, cougar, and wolf. Many others, such as bear and beaver, have been greatly reduced in number (Golley 1962).

Vegetation in north Georgia has suffered extensive alteration in the past two centuries, complicating any estimation of the relative quantities of original species and their distribution across the landscape. Originally, the region was predominantly forested with a mix of hardwoods and pine. The earliest settlers reported large stands of yellow pine in the oak-hickory forests, but whether these were products of natural forces or the results of aboriginal hunting methods—which utilized fire to drive and concentrate game—is unknown. Large-scale clearing and cultivation of cotton in the nineteenth and early twentieth century removed large tracts of native forest and caused serious erosion. These effects have had a substantial negative impact on the integrity of archaeological deposits throughout north Georgia.

III. FOUNDATIONS: THE PALEOINDIAN PERIOD

This chapter provides a brief summary of the Paleoindian period in the Southeast. It is intended to provide context and historical continuity for the contents of Chapter IV. A previous GARD manuscript entitled *Paleoindian Period Archaeology of Georgia* (Anderson et al. 1990) provides a detailed analysis of this subject, and the reader is referred to that document for additional information.

The Paleoindian period (14,000 B.P.?–10,000 B.P.) marks the beginning of human occupation in the New World. Exactly when the first human populations permanently settled the Western Hemisphere is uncertain; most Americanist archaeologists believe it was sometime between 20,000 and 14,000 years ago, in the last stages of the Pleistocene glaciation. The earliest securely dated Paleoindian site is located in Monte Verde, Chile, where dates as early as ca. 13,800 B.P. have been obtained (Dillehay 1989). However, recent work at the Cactus Hill and Topper sites, for example, indicate that humans may have been in the mid-Atlantic and southeastern United States prior to the advent of Clovis culture (Goodyear 1999; McAvoy and McAvoy 1997). Although Clovis is currently considered the first cultural tradition to appear in the United States, recent work at those sites and others have led some to call for a prehistoric cultural chronology that includes a pre-Clovis classification (e.g., Goodyear 1999).

The end of the Paleoindian period coincides with the Pleistocene/Holocene transition. In most areas of the Southeast, that transition is given an arbitrary terminal date of 10,000 B.P. (Watts 1975; Whitehead 1973). By that time, environmental conditions were approaching those that exist today. North of 33°N, which is the approximate latitude of the Fall Zone in the vicinity of Macon, Georgia, "patchy" enclaves of xeric boreal forest/parkland vegetational communities were gradually replaced by widespread stands of mesic oak-hickory forests. This forest type lasted until the landscape became severely modified by the effects of large-scale agriculture, industry, and residential construction that began in the latter portion of the nineteenth century.

The Paleoindian lithic tool kit was based on a highly refined flake and blade technology. Examples of Paleoindian lithic tool types include unspecialized flake tools, formal side and end scrapers, gravers, denticulates, specialized hafted unifacial knives, large bifacial knives, and specialized lanceolate projectile points, which were sometimes "fluted." The best known of these is the Clovis point, the earliest recognized projectile point type in the western hemisphere. Clovis variants have been found from Canada to the southern tip of South America.

Formal variation in projectile point morphology began to emerge in regions of the Southeast by about 11,000 B.P., probably due to restricted movement and the formation of loosely defined social networks and habitual use areas (Anderson 1995; Anderson et al. 1992). These new forms include the Cumberland, Suwannee, Simpson, Beaver Lake, and Quad types (Anderson et al. 1990; Justice 1987:17–43; Milanich and Fairbanks 1980).

A significant wood, bone, and antler technology was present as well. Organic materials do not preserve well in the acidic soils that cover much of the Southeast, and they are very rarely found. However, at sites where they have been preserved, primarily in Florida, it is clear that organic media such as wood, bone, and antler were very important. These materials were manufactured into projectile points, foreshafts, leisters, awls, and needles, to name just a few tool categories (Milanich and Fairbanks 1980: Figures 3, 5, and 6).

Original views of the Paleoindian subsistence economy were based on observations from a series of sites in the western United States where Paleoindian artifacts, particularly large, lanceolate, "fluted" points, were recovered in direct association with the remains of several species of now extinct Pleistocene megafauna. Initial interpretations of Paleoindian subsistence suggested that these early inhabitants focused primarily on hunting such large mammals as mammoth, mastodon, bison, ground sloth, giant armadillo, tapir, horse, wild pig, and caribou. Resources such as arboreal seed and nut crops as well as small mammals, birds, and fish were, until recently, assumed to have been minor dietary constituents.

Because of the striking similarity in Paleoindian technological organization that pervaded most regions of the western hemisphere until ca. 10,500 B.P., the large-game–oriented subsistence model devised from the western United States evidence was initially assumed to have applied to all Paleoindian economic systems, including those associated with groups in northern Georgia. However, archaeologists working in Georgia have yet to document a clear association between Paleoindian tools and the remains of displaced and extinct animal species known to have been present in the state as late as 11,000–10,200 B.P.—mastodon, bison, giant ground sloth, and giant armadillo, for example (Holman 1985:569–570).

Over the past 15 years there has been a reevaluation of Paleoindian subsistence, particularly for eastern North America, based upon data from sites such as the Meadowcroft Rockshelter in southwestern Pennsylvania. Cushman's (1982:207–220) analysis of the Paleoindian occupation at Meadowcroft Rockshelter suggests that the occupants were geared toward the type of "broad spectrum" resource utilization traditionally associated with the subsequent Archaic period. Her examination of the botanical remains indicates that a variety of leafy plants, seeds, nuts, and berries (Cushman 1982:207–220) were important dietary components.

Broad-based Paleoindian subsistence is also indicated by evidence from Florida. At Little Salt Spring, an important underwater site in Sarasota County, Florida, a variety of smaller mammals, fish, plants, and reptiles (including a now extinct form of giant land tortoise) have been shown to be constituents of the Paleoindian diet in that region (Clausen et al. 1979).

There is very little evidence for resource exploitation in the littoral by Paleoindian peoples living in the Southeast. This very likely is due to site obfuscation and destruction caused by coastal submergence during the Holocene, and not because the resources these ecozones contained were not utilized (e.g., Dunbar et al. 1988; Dunbar et al. 1991).

In summary, new perspectives on Paleoindian subsistence economy emphasize the utilization of a broader spectrum of ecotones and resources and de-emphasize the degree to which Paleoindians relied on large-game hunting for sustenance.

In the Eastern Woodlands, the majority of Paleoindian sites consist largely of diffuse lithic scatters at open locations, with more intensive occupations in rockshelter or cave settings. No conclusive evidence for permanent structures or long-term encampments has been located for this time period in the Southeast. The majority of the Paleoindian data recovered in Georgia to date are derived from surface scatters of projectile points and a small assortment of chipped stone implements collected from settings in which the depositional integrity has been compromised. However, a limited amount of data has been recovered from intact contexts (Anderson and Schuldenrein 1985; Elliott and Doyon 1981; Gresham et al. 1985; Kelly 1938; Ledbetter et al. 1996; O'Steen et al. 1983; O'Steen et al. 1986).

Several models of early Paleoindian settlement patterning have been advanced in the past quarter century (see Anderson et al. 1992 for an overview). Some are concerned with Paleoindians in general (Anderson 1990; Kelly and Todd 1988; Martin 1973), and others with regional trends (Anderson 1995; Gardner 1983; Morse and Morse 1983). Most are mechanistic models that portray specific economic strategies as primary reasons for how Paleoindians settled upon and utilized the landscape. Each is slightly different in its focus, with primacy placed on one of three major influences: (1) the need to maintain access to prominent, high-quality raw material sources (e.g., Gardner 1983); (2) a preference for exploiting specific habitual use zones and staging areas (e.g., Anderson 1995); or (3) a nomadic or seminomadic existence dictated to a large degree by the movements and availability of large game (e.g., Kelly and Todd 1988).

An attempt to review and assess each model is outside the purview of this study; however, there is a general consensus among archaeologists involved in Paleoindian research regarding Paleoindian settlement. Groups were probably comprised of approximately 25–50 individuals belonging to a few extended families. Marriage was almost certainly exogamous, and residence was likely extra-local. This would have assured that primary social groups remained small enough to be economically sustainable, but linked with a larger, interactive social network that provided information, cooperation, and mates of suitable kin distance.

Primary social groups very likely met with other groups at predetermined times and locations to cooperate in large-scale food acquisition (nut harvesting, fishing, shellfish gathering, etc.) and/or lithic resource extraction, as well as to exchange information, renew or create alliances, fulfill social obligations, find mates, and perform rituals. For most of the year, however, primary groups appear to have dispersed into loosely defined habitual use areas. These groups probably exploited a wide variety of flora and fauna, moving often to take advantage of seasonal resources. It is also probable that they periodically established logistical base camps, and used them as staging areas for special activity forays.

The close of the Paleoindian period is associated with the end of the Wisconsin Ice Age and the onslaught of new environmental conditions. Archaic period cultural manifestations have their foundation in the settlement, subsistence, and technological innovations that were developed in the face of this ecological transition. These developments manifested themselves in various ways throughout the next 7,000 years, and they define the Archaic experience.

IV. THE EARLY ARCHAIC PERIOD

In the Southeast, the Early Archaic subperiod is generally considered to have occurred between approximately 10,000 and 8000 B.P. During that interval, environmental conditions were approaching those that the first Europeans encountered in the sixteenth century. Hardwood primary forests and extensive palustrine swamps provided large and small game as well as a variety of plants for medicine, subsistence, clothing, and shelter. Rivers were used as travel corridors in addition to providing fresh water, fish, and shellfish. The only areas of low productivity would have been the pine stands that began to emerge in the uplands by about 8000 B.P. (Delcourt and Delcourt 1985).

The inhabitants of the study region enacted social, political, and economic strategies designed not only to take advantage of the biotic diversity inherent in this early Holocene environment, but also to alleviate the pressures (social and physical) that resulted from a concomitant increase in population. Technological innovations were developed, reformulated, or discontinued as these strategies were put into effect. The section that follows discusses Early Archaic technology, and its relationship to other aspects of social organization during that era.

TYPOLOGY, CHRONOLOGY, AND TECHNOLOGY

Early Archaic technology was organized in a manner that effectively exploited the surroundings by scheduling specialized extraction forays (fall/winter/early spring) and relatively frequent residential moves (late spring/summer) to take advantage of waxing and waning seasonal resource availability (see Binford 1980). As with all prehistoric societies in the Southeast, Early Archaic groups living in northern Georgia utilized a variety of organic and inorganic media to fashion all types of utilitarian, decorative, and ceremonial implements. Unfortunately, the lithic domain is the only aspect of their technology that has survived decay, a few rare cases notwithstanding. Therefore our understanding of Early Archaic culture is ultimately based on the content and distribution of lithic technology.

With regard to that technology, hafted bifaces are the major link between the Early Archaic world and the archaeologists that study it. These items, which functioned as spear points, knives, perforators, and scrapers, were produced in vast numbers. However, they were crafted with only a limited number of design characteristics. These characteristics were produced by mental concepts and templates shared by individuals with access to the same information. Therefore, hafted bifaces are a very important aspect of the archaeological record because they allow us to identify components, and relate those components to specific types of human behavior.

In terms of hafted biface technology, the Paleoindian/Early Archaic transition is expressed by the abandonment of lanceolate forms in favor of notched varieties (Figure 4). Big Sandy Side-Notched hafted bifaces, and their morphological correlates known as Bolen and Taylor points, were the first widely adopted non-lanceolate types to be produced in the study region. These forms were popular between approximately 10,000 B.P. and 9500 B.P.

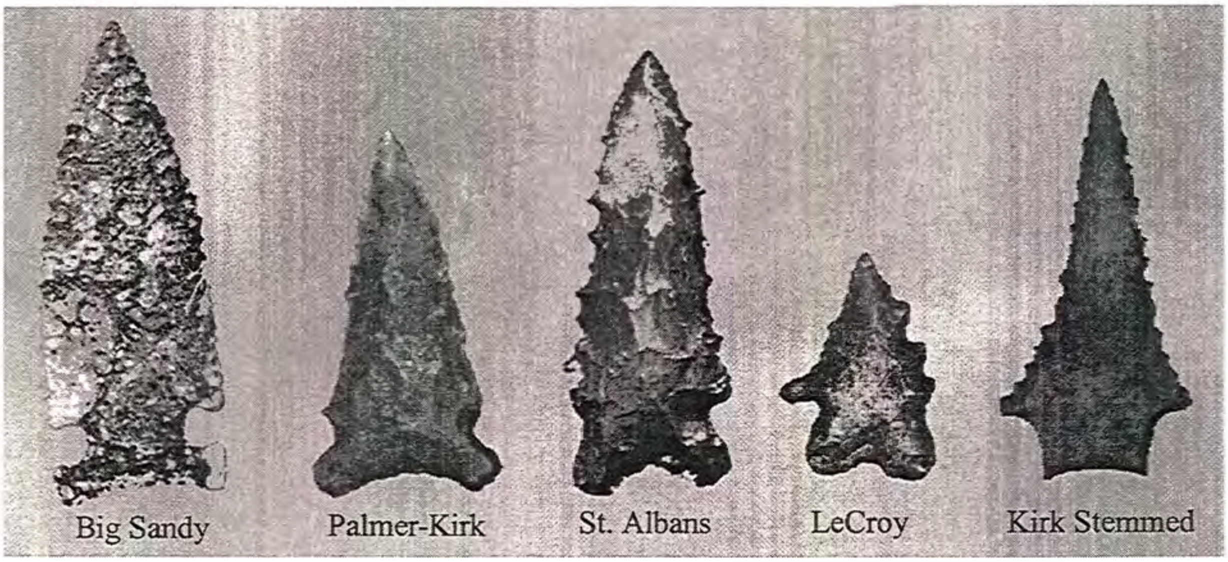

Figure 4. Early Archaic Hafted Biface Types Found in North Georgia.

Big Sandy, Bolen, and Taylor hafted bifaces exhibit essentially the same morphological and technological characteristics. The choice of terminology varies, and generally depends on the raw material source and the region in which the specimens were discovered. Big Sandys are generally manufactured from Ridge and Valley chert or quartz, and primarily attributed to Early Archaic societies living in the Piedmont, Blue Ridge, Ridge and Valley, and Appalachian Plateau provinces of Georgia, Alabama, and Tennessee (Cambron and Hulse 1983; O'Steen 1983). Taylor is a term that refers to Early Archaic side-notched specimens found in the Coastal Plain and Fall Line environs of South Carolina; they are produced from Coastal Plain chert (Michie 1966). Bolen is widely used to describe Early Archaic Coastal Plain chert side-notched points found in the Coastal Plain and Fall Line regions of Georgia and Florida (Milanich 1994).

Corner-notching replaced side-notching as the preferred hafting technique by approximately 9,500 B.P. These corner-notched forms, which are ascribed to the Palmer-Kirk series, are commonly encountered in the study region (see Figure 4). Coe (1964) and others have made a distinction between Palmer and Kirk corner-notched hafted bifaces, implying that time, geography, and/or social barriers separated the people responsible for their manufacture. Palmer points have been described as small corner-notched bifaces with straight, ground bases, and serrated blade margins (Coe 1964:67-69). Kirk Corner-Notched types were considered to be larger versions of the Palmer point that lacked basal grinding; the blade margins are occasionally beveled or serrated (Coe 1964:69-70).

As Sassaman (1996:63) has pointed out, many archaeologists have had difficulty distinguishing between Palmers and Kirks, as their morphological characteristics form more of a continuum than discrete categories. For example, a large assemblage of corner-notched hafted bifaces was recovered from the Early Archaic horizon at the G.S. Lewis East site on the Savannah River. Hanson (1988) attributes morphological variations within that assemblage to the maintenance and repair of curated projectile points. Some of the specimens illustrated in that document could be classified as a Palmer under Coe's (1964) criteria, while others are "classic" Kirk forms. In addition, many specimens exhibit attributes associated with both types.

The large hafted biface assemblage from Early Archaic contexts at the Florence site, which is located in the Ridge and Valley province of northwestern Alabama, also illustrates that the two types cannot be easily distinguished (Ensor et al. 1999). Both Palmer-like and Kirk-like examples were found in direct association within the Early Archaic levels. Specimens that shared qualities of both were also present in that context. Again, the differences can be attributed to hafted biface repair and resharpening.

Citing the examples above, I agree with Sassaman (1996:63-64) that Palmer and Kirk hafted bifaces are contemporaneous, and that they were produced by the same people. The differences appear to be related to raw material and the artifact's use-life stage when it was discarded or lost[2]. Therefore, the author has adopted the term "Palmer-Kirk series" when referring to Early

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[2] John Cable recognizes variability in the Early Archaic hafted biface assemblage from the Haw River site in North Carolina, but his argument implies the differences result from a subtle time-transgressive shift in preferences for one form over another rather than maintenance behavior (Cable 1996: Claggett and Cable 1982). He states that "...the diagnostic attribute clusters used to

Archaic corner-notched projectile points. Others have incorporated these two types into a category referred to as the "Kirk Corner-Notched Cluster" (Chapman 1977). No temporal or cultural distinctions are made under these classifications.

North of the study area, in Tennessee and West Virginia for example, the production of Palmer-Kirk series hafted bifaces is thought to have ceased by approximately 9,000 B.P. (Broyles 1971; Chapman 1977). This technological tradition was apparently replaced by the manufacture of bifurcate hafted bifaces beginning about 9000 B.P. Several bifurcate forms have been identified; they include types known as St. Albans, LeCroy, Kanawha, and MacCorkle. These forms are either side- or corner-notched, and exhibit basal concavities that give them their bifurcate appearance.

Although bifurcates are found in north Georgia, they are relatively rare. In addition, they are not found as discrete assemblages, but as very minor additions to Palmer-Kirk components. It is suspected that the people manufacturing bifurcates did not make extended in-roads into north Georgia, or extensive contacts with local groups. Instead, people in the study region appear to have continued to rely heavily on the Palmer-Kirk forms until about 8500 B.P. They may even have produced them until the early portion of the Middle Archaic period (ca. 7750 B.P.?).

Hafted bifaces with shallow to non-existent corner-notches were being produced along with the more deeply corner-notched Palmer-Kirk types by approximately 8800 B.P. (Broyles 1971). Some were serrated, but the bases were not ground. Known by the term "Kirk Stemmed", they were manufactured until about 7750 B.P., which transcends the Early Archaic/Middle Archaic temporal interface (Chapman 1985; Kimball 1996).

As was the case during the preceding Paleoindian period, large bifaces were a common addition to the Early Archaic tool-kit. These items were probably used as tools, but they also served as cores, providing high-quality raw material for tool production when groups had moved away from lithic sources during the course of their seasonal rounds and logistical forays (see Kelly 1988; Kelly and Todd 1988).

Formal tool classes associated with Early Archaic lithic technology include end and/or side scrapers, drills, perforators, and knives. Many of these unifacial or bifacial items were manufactured from high-quality chert, and frequently sharpened or repaired. Some specimens started their use-life as a hafted biface that had been broken beyond its effectiveness as a projectile point, while others were fashioned directly from unaltered raw material. Finally, the adze is another chipped stone tool known to occur in Early Archaic contexts. These large bifaces also have a ground stone correlate (see below).

Chipped stone adzes similar to those recovered from Early Archaic contexts in north Georgia occur in late Paleoindian, Dalton phase components as well (Morse 1971; Goodyear 1974). They have been interpreted to be woodworking implements, but use-wear analyses indicate that the bits are more often smoothed than step-fractured (Goodyear 1974; see Michie 1996: 261).

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differentiate the Palmer and Kirk Corner-Notched types were not discretely distributed, indicating that these trends were part of a *continuous process of formal change within a single stylistic tradition*" (Cable 1996:112; emphasis mine).

This suggests that they may have been used as digging implements in addition to woodworking devices.

Expedient chipped stone tools intended to be hand-held or hafted, were also an integral part of the lithic inventory. These tools were primarily flakes or blades that were reduced from a core, used, and quickly discarded. They functioned as scraping and cutting implements, and are generally made from expired chert tools and cores, or raw material that is locally abundant and easily acquired.

The production of ground stone tools appears to have significantly increased with the advent of the Early Archaic period, and their presence is one of the archaeological signatures associated with the Archaic period as a whole. However, since many more Archaic components have been identified, it is likely that Paleoindian groups also relied on ground stone for activities such as chopping, digging, and processing botanical remains. In general, Paleoindian occupations were much smaller, and fewer diagnostics (i.e.; hafted bifaces) were deposited. This has very likely created a bias, in that many more Paleoindian components containing ground stone tools have gone unidentified. The unidentified components occur either as discrete assemblages that lack diagnostics, or as assemblages that have been incorporated into later components through natural site formation processes.

In any case, Early Archaic people ground stone either as a manufacturing process, or while grinding nuts, plants, and other items. Ground stone implements in the first category include celts, axes, adzes, decorative ornaments, and possibly, the enigmatic "eggstones." The latter is a smoothed oblong stone, a few centimeters long, that has been pecked and ground on one end to create an indentation (Whatley 1986). These artifact types are invariably found out of context, but are thought to be associated with Paleoindian and/or Early Archaic technology; their function is unknown.

Celts, axes, and adzes are generally thought be the hafted elements of composite tools, although they could have been used in a hand-held fashion for some tasks. Celts and axes are exclusively associated with woodworking, while adzes may have been used for digging pits, posts, and other types of excavations, as well as planing and smoothing wood (see above).

Other tools became ground through use-wear; polished, pitted, and scoured slabs and cobbles exhibit the effects of food processing or indirect percussion. Often referred to as manos, metates, nutting stones, and anvil stones, these items are common additions to Early Archaic components in the region.

Early Archaic people also used readily accessible lithic material in its natural form as instruments of percussion, chopping, and grinding. These cobble tools were expedient in that they were gathered, used, and discarded at or near the point of acquisition. Quartz cobbles are the most common implements in this category, but other hard materials such as quartzite, granite, granitic gneiss, and mica schist were also used in this capacity.

In an indirect fashion, lithics were also important in the realm of cooking technology. Quartz cobbles and other naturally occurring rocks in the vicinity were used to line and delineate cooking and heating areas. Quartz cobbles played an especially important role in the cooking process, as they were heated and subsequently placed in a liquid intended for consumption. These liquids (soups and stews for example) were likely held in leather bags, wooden bowls, and/or leak-proof baskets. The fire-exposed cobbles were placed in these containers to heat the contents. After several of these episodes the cobbles fragmented to the point where they no longer efficiently transferred heat energy, and were discarded. It is also likely that some of the heat altered cobbles encountered at Early Archaic sites, and all Archaic sites in general, were discarded in anticipation of a residential move to another location before they lost that efficiency. These "fire cracked rock" discards are commonly encountered at many substantial sites containing Early Archaic components.

SUBSISTENCE

Early Archaic groups that lived in north Georgia relied on a broad spectrum of comestible resources for sustenance. Sustained horticulture was not practiced, and efficient and effective long-term storage technology had yet to be developed. Subsistence, therefore, relied on constantly procuring plants and animals from the surrounding environment. One of two primary food acquisition strategies was used to ensure that food was always available.

The first strategy is what is commonly referred to as the collector model, while the second is described as the foraging model (Binford 1980). Collecting is geared towards exploiting spatially and/or temporally heterogeneous environments where most primary resources are available only in certain areas or at specific times of the year. This scheme involves the deployment of specialized task groups from a central location, a base camp for example, to obtain and perhaps process food items. Some of these forays can be fairly long-term, lasting anywhere from a few days to several weeks. Except for provisions, the procured food is generally returned to the base camp and consumed at that location.

Archaeologically, collector behavior is expected to have resulted in relatively specialized assemblages that accumulate in areas where activities were short-term, and focused on one, or a few, specific resources. Base camp occupations produced a larger and more diverse assemblage because of the many types of maintenance and domestic activities that occurred at these locations over an extended amount of time.

With a few exceptions (i.e., Kelly 1983), foraging is associated with warm regions that exhibit relatively homogenous environments. The foraging model is based on residential mobility and the comprehensive exploitation of food resources within a specific territory. Base camps are established at centralized locations, and subsistence is obtained by exploiting the immediate surroundings. Once the area has been depleted to the point of diminishing returns, a new base camp is established elsewhere. In this system, long-term logistical forays by task groups are not needed because food resources are readily available.

Foraging strategies, in archaeological terms, should result in assemblages that show very little inter-site diversity since the same types of activities occurred at each location. The specialized extraction sites that were produced during more ephemeral and less frequent forays produced much fewer artifacts, and are more difficult to detect archaeologically. Therefore, the territory associated with prehistoric foraging appears as a more homogeneous archaeological landscape.

Foraging and collecting are polarized conceptualizations that idealize what were obviously very complex strategies developed to ensure that groups survived and thrived within their physical world. It is unlikely that, in Southeastern environs at least, Early Archaic people adhered to one extreme or the other. All groups probably developed subsistence strategies that were derivations of both, and the foraging-collector dichotomy provides a heuristic base from which to assess the nature of prehistoric subsistence as it is represented in the archaeological record.

With regard to the subsistence base, Early Archaic people are thought to have exploited a wide range of plants and animals. Because preservation conditions are generally poor in the Southeast, and the archaeological record is biased towards implements associated with hunting and animal processing, the Paleoindian and Early Archaic subsistence base has been characterized as one focused on animal products. It is highly likely, however, that many plant taxa were utilized for sustenance and other purposes. This is especially the case for north Georgia and the surrounding region, which exhibited deciduous forests since approximately 10,000 B.P.

Target faunal species probably included white-tailed deer, bison, woodland caribou, and a variety of smaller mammals, as well as birds, amphibians, reptiles, and fish. There is no evidence that freshwater shellfish were exploited to a significant degree. Plant species likely included hardwood mast and a large array of plants, especially opportunistic taxa that quickly colonized areas disturbed by human activity.

In terms of direct archaeological evidence, the Furman Shoals (9BL69) data indicates that hickory nuts were probably being consumed on site, as were fish and aquatic turtles (Espenshade et al. 1994:156; O'Steen et al 1994:147).

Finally, a wide variety of animal species were discovered in the Late Paleoindian/Early Archaic and Early Archaic levels at Dust Cave in northwest Alabama. The faunal data from that important site verifies that Early Archaic people hunted waterfowl, large and small terrestrial mammals, aquatic mammals, and a variety of birds (Grover 1994). Plants such as grape and goosefoot were probably used by this time, according to the Dust Cave botanical assemblage, as were mast resources like walnut, hickory, and acorn (Gardner 1994).

SETTLEMENT

Although subsistence is at the most basic level of human needs, some of the most notable recent models of Early Archaic settlement are predicated on needs that are not directly related to food gathering. The "band-macroband" model, which was developed by David Anderson and Glen Hanson (1988), and recently revised by Anderson (1996), has proved to be valuable in terms of its broad scope and inherent "testability" with regard to the archaeological evidence.

The band-macroband model is based on data collected from the Savannah River drainage, and extrapolated to include all major drainages in the South Atlantic Slope region from the Neuse River in North Carolina to the Ocmulgee/Altamaha system in South Georgia. It asserts that socially distinct local bands composed of co-residential groups totaling perhaps 50-150 individuals occupied specific drainage systems; movement primarily occurred within the river catchment.

As discussed below, these groups are thought to have established winter base camps on first and second riverine terraces throughout the inner Coastal Plain (Sassaman 1996; Sassaman et al. 1990). They moved to the coast in the early spring, and by the late spring, had traveled upstream to the Piedmont where they lived until late fall. At that time, people moved downstream to re-establish winter base camps.

Bands are postulated to have been organized into loose networks that transcended individual river drainages. The networks were maintained during aggregation events, when alliances were formed that facilitated and regulated the exchange of mates, information, and commodities. The alliances created during these episodes, and the social network that was generated from these alliances, were manifest as macro-bands consisting of approximately 500-1,500 people.

Anderson and Hanson's model is predicated upon a low population inhabiting a region that has abundant but seasonally fluctuating organic resources, as well as highly variable distributions of accessible lithic raw material. It asserts that settlement was organized to ensure that intra and inter-band social interaction would occur at regular intervals, primarily to exchange mates. In a recent publication Anderson (1996:44) states:

> *The need to find and exchange mates in a landscape characterized by extremely low numbers of people, it is argued, is the critical factor shaping Early Archaic as well as earlier Paleoindian settlement systems in the Eastern Woodlands* (italicized in the original).

As stated previously, aggregation events are also presumed to have been times to share information, trade in commodities, and possibly conduct large-scale specialized extraction activities. These episodes are predicted to have occurred at or near the Fall Line, and probably during the late spring and/or late fall as groups moved to the Piedmont from the Coastal Zone in the late spring, and from the Piedmont to the northern Coastal Plain in the late fall (see below). Co-operative resource procurement during the late spring possibly consisted of anadramous fish harvests, while the late fall is an ideal time to harvest mast resources in large quantities.

Two important aspects of the Early Archaic economy—food and lithic raw material—were temporally and/or spatially distributed in a fashion that would have facilitated this prearranged cross-drainage interaction among small groups that were widely spaced.

The natural landscape of north Georgia and surrounding regions during all but the earliest portion of the Early Archaic period appears to have harbored biotic resources that were both widespread and predictable, at least during the spring, summer, and early fall (see Anderson 1996). The location and availability of target species during the late fall and winter months (white-tail deer, small mammals, and birds, for example) were much more restricted in terms of geography and population density (Anderson and Hanson 1988).

In the Anderson-Hanson model, this temporal discrepancy in resource availability is thought to have been mitigated by adopting a foraging mode of subsistence during the spring to early fall, while switching to a collector-based strategy during the late fall and winter. The lengthiest stays, in terms of site permanence, occurred at late fall/winter base camps that were established near the Fall Zone during the collector phase of the annual rounds. Aggregation events are thought to have been planned to coincide with the return to the Fall Zone during the late fall, and/or as groups were traveling from the Coastal Zone to the Piedmont during the late spring.

In terms of lithic raw material utilization, the Anderson-Hanson model predicts that Coastal Plain chert was obtained during the late fall and winter when groups occupied the Fall Zone and inner Coastal Plain. Lithic supplies used while exploiting the lithic-poor Coastal Zone during the early spring could have been replenished as people passed through the inner Coastal Plain on the way to the Piedmont.

As Coastal Plain chert supplies diminished during the summer and fall occupations in the Piedmont, people relied more heavily on locally available quartz, and to a much lesser extent Piedmont chert, for both formal and expedient tools. Anderson and Hanson (1988) assert that the co-occurrence of Piedmont and Coastal Plain lithics at Early Archaic sites all along the Savannah River supports the contention that long-distance travel was occurring. They also postulated that the clinal decrease in lithic type, with regard to distance from source, represented movement that was primarily restricted to the Savannah catchment.

The availability of lithic raw material is at the focus of a more recent model of Early Archaic settlement that is based on a re-examination of data collected from the Hardaway site, several Savannah River sites, and elsewhere (Daniel 1996, 1999). Daniel argues that Southeastern groups were tied to major geological sources of high-quality lithic material, and that these ties were influential in creating social, economic, and political boundaries.

In the South Atlantic Slope region, two major groups are discerned, those that exploited the Uwharrie rhyolite sources in North Carolina, and those who obtained lithic material from the Allendale quarries near the Georgia/South Carolina border (Daniel 1994). It is postulated that these groups ranged throughout a territory that cut across drainages and physiographic provinces. Interaction between these "macro-groups" likely took place in the intervening and overlapping territorial range.

Daniel (1996:87) points out that Sassaman's (1996) South Carolina data on lithic frequencies by distance from source show clinal drop-offs both along and across drainages. He states that "chert frequencies are as much as *30 percent greater across the middle Coastal Plain than up the Savannah River*" (Daniel 1996:87 [italicized in the original]). If the Anderson-Hanson model of intra-drainage band movement is correct the inter-drainage distribution of chert types should decline, and in a more dramatic "step-like" fashion. Since it does not, Daniel asserts, cross drainage movement is indicated.

Although Daniel does not deny that social and environmental factors affected decision-making with regard to Early Archaic settlement, his model places raw material availability at the focus of the decision-making process. This emphasis is apparent in his statement that raw material preferences "strongly conditioned prehistoric hunter-gatherer adaptations in the Southeast (Daniel 1996:91).

A third view of Early Archaic settlement has been offered by O'Steen (1983; 1996). It is much more localized in scope than the two previously discussed models, and utilizes the Wallace Reservoir, Barnett Shoals, and Lake Sinclair data to explain land-use patterns within the Piedmont portion of the Oconee River drainage (O'Steen 1983, O'Steen et al 1994)

O'Steen analyzed the number of Early Archaic components that were present at each identified Early Archaic site in the Wallace Reservoir region. That data indicate that significantly more multicomponent sites occur at the shoals than in other portions of the surveyed areas. The ratio of single to multicomponent sites in the inter-shoals segments of the Wallace Reservoir is 27:1, while at the shoals it is 2:1 (O'Steen 1996:101). This is interpreted to represent an affinity for the shoals, where more intensive, more permanent, and more frequent occupations occurred. Groups were likely attracted to the higher resource densities and increase in biodiversity that were associated with these locations (see O'Steen 1983).

In this model, base camps were established near the shoals. Short-term logistical forays, and probably longer-term seasonal excursions, were launched from these areas. It is also possible that these places were used for aggregation events as postulated in the Anderson-Hanson model. O'Steen's Lake Sinclair data, however, indicate that the Fall Zone was not extensively utilized as predicted by Anderson and Hanson (1988).

Also in contrast to the Anderson-Hanson model, cross-drainage interaction and movement is indicated by raw material utilization. Both Ridge and Valley chert and Coastal Plain chert are present in the Early Archaic assemblages studied by O'Steen; these materials augmented the supply of locally available quartz and Piedmont chert. Ridge and Valley chert is apparently more common in the northern portion of the Wallace Reservoir region, while Coastal Plain chert artifacts are more abundant in the southern section of O'Steen's study area.

Non-local raw material probably entered the economy both by direct acquisition and exchange. The degree to which one was more common than the other is unknown. However, inhabitants of the northern Wallace Reservoir region appear to have had cross drainage ties to people and resources to the north and west, while those living in the southern portion of the Wallace Reservoir area had stronger ties to the east and south.

This implies that separate social entities utilized the upper Oconee. At this time, however, there are insufficient data to determine if these groups are contemporaneous cultures with overlapping territories and interaction spheres, or if there was a shift away from one geographical range to another by a single, historically related culture.

According to the evidence obtained from the Tallapoosa River over the last decade, Early Archaic groups residing in the northwestern Piedmont and southern Ridge and Valley provinces were organized in a manner similar to that observed by O'Steen (Gresham 1990; Stanyard 1991, 1997; Stanyard and Pietak 1998). The Tallapoosa is a much smaller drainage than the Oconee, however, and the number of Early Archaic sites per river-kilometer is accordingly fewer.

O'Steen reports 272 Early Archaic sites along a 60-km segment of the Oconee River, resulting in a ratio of 4.53 sites per river-kilometer (O'Steen 1983). A total of 14 Early Archaic sites have been discovered along the 20-km stretch of the Tallapoosa River that has been surveyed and tested, resulting in a ratio of 0.70 sites per river kilometer (Gresham 1990; Stanyard 1997).

Although reduced in scale, the nature of the site distributions in the Tallapoosa survey area has some parallels with that associated with the Piedmont Oconee. Along the Tallapoosa River, only one site (9HR268) contains a considerable number of Early Archaic (Palmer-Kirk series) hafted bifaces. The remainder of the sites are scattered along the floodplain (n= 6) or first and second (n= 7) terraces. All of these latter sites contained between one and three hafted bifaces, while 9HR268 yielded more than 20 specimens.

Site 9HR268 may have been a base camp and/or aggregation loci of the type described and discussed above. However, the site is located approximately 300 m from the river on the floodplain at the base of a steep ridge. Currently, there does not appear to be any distinguishing physiographic feature, shoals for example, in the vicinity. On the other hand, an old river channel terminates approximately 100 m from the site, and if one extrapolates from the current river course and the configuration of the old river channel, it is possible that the Tallapoosa River was much closer at the time of occupation. If so, it may have harbored a shoal, or some other type of distinguishing characteristic that attracted the inhabitants.

Interestingly, all of the Early Archaic hafted bifaces discovered during the Tallapoosa projects are Ridge and Valley chert, or locally abundant quartz. This pattern is repeated in the Allatoona Reservoir data (Ledbetter et al. 1987); nineteen of the 21 specimens analyzed during that study are Ridge and Valley chert, while the other two are quartz. This suggests that Coastal Plain chert was not a significant trading commodity or focus of direct acquisition in northwest Georgia. Which is understandable given the abundance of high quality chert that was available in nearby areas of the Ridge and Valley. However, the lack of Coastal Plain chert may also be significant in that it does not appear to have been an important commodity in the formal expression of alliance and exchange among groups with access to Coastal Plain chert. In other words, there does not seem to have been a *quid pro quo* exchange of lithic material that was meant simply as a gesture of cooperation.

Since the environments of the Piedmont Tallapoosa and the Piedmont Oconee are similar in terms of resource structure and availability, it is unlikely that there is a purely subsistence-motivated reason for moving from one area to the other during the course of the year. If movement did occur, it was likely for the social and biological purposes that are associated with aggregation episodes. However, until there is evidence to demonstrate that this occurred on a regular or scheduled basis, it appears that the Ridge and Valley chert found in the Wallace Reservoir region is likely to have reached that area through indirect and/or informal exchange. The nature of this exchange, and the way in which the intervening territory was settled, is unknown.

According to the results of the Allatoona Reservoir Survey conducted in 1985-1986, the stretch of Etowah River that extends across portions of Bartow, Cherokee, and Cobb counties was not extensively utilized during the Early Archaic period (Ledbetter et al. 1987). Only 20 Early Archaic sites were discovered within the 10,526-ha (26,000-acre) survey area, resulting in a site density of 0.0019 Early Archaic sites per hectare, while the Wallace reservoir surveys (ca. 7,000-ha; 17,290-acres) yielded a ratio of 0.0389 sites per hectare. The Tallapoosa Reservoir survey encompassed approximately 1,620-ha. (4,000-acres), and the density of Early Archaic sites is 0.0086 per hectare.

None of the 20 Early Archaic sites identified in the Allatoona survey appear to have been intensively occupied, as each yielded only one or two hafted bifaces. Given the large survey area, it is expected that at least a few larger base camp/aggregation sites would have been discovered if the Etowah River was utilized in a manner that is evident in the drainages to the east and west.

The discrepancy in Early Archaic site density between the Oconee and Etowah study areas is on the order of magnitude (ca. 205 percent). Assuming that the present similarities in bankful width, water depth, and flow rates of these rivers, as well as the structure of the resources that surround them, existed during the Early Archaic, this difference cannot be attributed to environmental factors alone.

Although the project areas were significantly smaller, a similar situation is evident in the upper Ocmulgee region of the southern Piedmont in Rockdale County. Very few Early Archaic components were encountered during the recent Georgia International Horsepark and Big Haynes Reservoir projects at the headwaters of the Ocmulgee, which are located between and equidistant from the Allatoona and Wallace reservoir project areas (Stanyard and Stoops 1995; Stanyard 1997). All of the components were very small, and apparently represent short-term encampments. Ridge and Valley chert and Coastal Plain chert hafted bifaces are present in these assemblages, suggesting that there were ties to both source areas. The existence of specimens produced from quartz indicates that the Early Archaic visitors to this region were manufacturing hafted bifaces locally. Whether the chert examples were produced from imported raw material, or were brought to the area in final form from elsewhere is unknown at this time.

At this stage, it is unknown whether the area between the Tallapoosa and Oconee harbored an intervening, socially distinct group or groups that did not intensively exploit the Etowah and upper Ocmulgee in a fashion similar to those living in the Tallapoosa and Oconee drainages, or whether this was a hinterland exploited by both the Oconee and Tallapoosa groups. In either case, the upper Ocmulgee region may have been the point of exchange that facilitated the introduction of Ridge and Valley chert to the upper Oconee region. If so, Coastal Plain materials did not alternatively move west and northward in a similar manner.

Turning to northeast Georgia, the Russell Reservoir data indicates that site density along the upper Savannah was probably not as high as it was in the Oconee catchment during the Early Archaic, but it was apparently much higher than that of the Tallapoosa and Etowah drainages. A total of 59 sites with Early Archaic[3] components occur within the 11,108 acres (4,497 ha) that were intensively surveyed for the Russell Reservoir project (Anderson and Joseph 1988: Table 2; see Gardner 1984; Gardner and Barse 1980; Taylor and Smith 1978). The site density equates to 0.013 sites per hectare.

[3] Stanly and bifurcate hafted bifaces were originally identified as Late Early Archaic by some researchers involved in the Russell Reservoir project. This discussion includes only those sites with Palmer-Kirk and Kirk Stemmed hafted bifaces.

As mentioned above, Early Archaic site density in the Wallace Reservoir (Oconee River) is 0.0389 sites per hectare, while it is only 0.0019/ha in the Allatoona (Etowah River) project area and 0.0086/ha in the Tallapoosa (Tallapoosa River) study tract.

A combined total of 141 Early Archaic hafted bifaces were recovered from survey, testing and data recovery investigations within the Russell Reservoir study area (Anderson and Joseph 1988: Table 2). Most (67.4 percent; $n= 95$) of the specimens are produced from locally available quartz. Slightly less than one-quarter (21.3 percent; $n= 30$) of the examples are manufactured from chert that has been classified as Coastal Plain/Piedmont chert. Material from these two regions can be very similar, and are sometimes indistinguishable (see Chapter II). Researchers involved in the Russell Reservoir project recognized the problem, and collapsed both raw material types into a single category. The remaining hafted bifaces were produced from metavolcanics (5.65 percent; n=8) and Ridge and Valley chert (5.65 percent; n=8).

Many or most of the quartz hafted bifaces were probably manufactured from material obtained nearby. The same is true for the metavolcanic material, which occurs in places throughout the project vicinity. The source of the Ridge and Valley chert is unknown, but it could have been gathered during forays into areas north and/or westward of the Russell Reservoir region. It is also possible that it was obtained through trading networks involving people associated with groups inhabiting the Oconee drainage, and perhaps other catchments to the north and west.

Although Coastal Plain chert from Allendale and other sources are clearly present at Early Archaic sites within Russell Reservoir, the source of other material with similar characteristics is in doubt. The inability to confidently distinguish Coastal Plain from Piedmont chert is still a problem today, and it has undermined the ability to determine the degree to which raw material was being transported and curated. In more specific terms, it complicates the research on Early Archaic settlement discussed above, which to varying degrees, is linked to the distribution and utilization of raw material (Anderson 1996; Daniel 1996, 1999; Sassaman 1996).

In north Georgia, very few uncontaminated Early Archaic components have been investigated through wide-scale and intensive archaeological excavations. Therefore, there is a general lack of detailed information concerning site-specific behavior.

During the Russell Reservoir project, data recovery excavations were conducted at three sites that contained Early Archaic components; the sites include Rucker's Bottom (9EB91), Gregg Shoals (9EB259), and Clyde Gulley (9EB387). Rucker's Bottom was the only one of the three where a large portion of the Early Archaic zone was exposed (Anderson and Schuldenrein 1985).

However, other than 14 diffuse scatters of heat-altered rock, no features were encountered. The rock scatters may have been hearths, but that could not be conclusively proven. Organic material was not preserved, and no radiocarbon dates were obtained for the Early Archaic levels.

Although 28 Palmer-Kirk hafted bifaces were encountered in the Early Archaic horizon at Rucker's Bottom, Anderson and Joseph (1988) concluded that the site was probably visited many times during the Early Archaic era, and they surmised that most if not all of the visits were of short duration and by groups with "a mobile, wide-ranging adaptation" (Anderson and Joseph 1988: 122, Anderson and Schuldenrein 1985: 308)

Two possible hearths were discovered in the Early Archaic horizon at Gregg Shoals, but that excavation zone contained one Stanly and one Palmer-Kirk hafted. Another specimen is fragmentary and may be a Kirk Stemmed, St. Albans, or Stanly hafted biface (Anderson and Joseph 1988; Tippit and Marquardt 1984). No organic material was recovered, and there is no radiocarbon evidence that indicates whether those features are attributable to an Early Archaic or early Middle Archaic (Stanly) component.

Only a few Palmer-Kirk series hafted bifaces were encountered during data recovery at Clyde Gulley (Tippit and Marquardt 1984). No features were discovered in the Early Archaic levels, and no organic material was obtained. Like Rucker's Bottom, Gregg Shoals and Clyde Gulley were deemed to be places that were briefly occupied during Early Archaic times. They do not appear to have been visited as frequently as Rucker's Bottom, however.

At Furman Shoals (9BL69), which is located along the Oconee River in the Lake Sinclair region, two pit features were encountered in the Early Archaic levels (Espenshade et al. 1994). Although diagnostic material was not discovered in the features, the pits originated in a deeply buried cultural horizon containing Palmer-Kirk series and Bolen hafted bifaces. As mentioned in the previous section on subsistence, hickory nut, fish, and aquatic turtle remains were recovered, suggesting that 9BL69 may have been occupied during late summer or fall.

Unfortunately, a considerable amount of Early Archaic material had apparently eroded away prior to data recovery investigations. As a result, the nature and extent of the Early Archaic occupation(s) cannot be determined with confidence. However, a relatively large number of hafted bifaces occur in the data recovery assemblage as well as private collections (Espenshade et al. 1994; O'Steen et al. 1994). In addition, the tool-kit includes both formal and expedient tools that are manufactured from a variety of raw materials. Based on the available data, therefore, it appears that Furman Shoals may have been an area where Early Archaic groups aggregated and/or established long-term base camps.

The archaeological deposits at the Vulcan site (9BR775) may represent a single late Early Archaic occupation that occurred in modern-day Bartow County (Ledbetter et al. 2001). No radiocarbon dates were obtained, but several artifacts that appear to be fragments of Kirk Stemmed hafted bifaces were discovered during data recovery investigations.

Although the occupation floor was discovered within 20 cm of the surface, there is no evidence of plowing, and the archaeological material appears to have been uncontaminated by subsequent human occupations (Ledbetter 1992). Taking advantage of this rare opportunity, Ledbetter was able to identify specialized activity areas by analyzing artifact distributions. The results of those analyses also corroborated the physical evidence that a shelter might have been present during the Early Archaic habitation (Ledbetter 1992: 99-116).

The stay appears to have been of short duration, and rather limited in scope. Although the occupants utilized an expedient technology that largely consisted of flake tools struck from thinned cores, the primary source of raw material is Ridge and Valley chert that was probably acquired at a distance of 20 km or more (Ledbetter 1992: 116). At least half, and possibly as many as two-thirds, of the flakes recovered from the Vulcan site exhibit some evidence of retouch and/or use (Ledbetter 1992: 116).

The expedient nature of the lithic assemblage is an interesting contrast to the conservation measures taken to ensure that raw material was not wasted. Perhaps this group was nearing the end of a scheduled round that was soon to include the replenishment of lithic supplies.

As is clearly evident, detailed information concerning Early Archaic settlement and site behavior in North Georgia is desperately needed. The data currently at our disposal are insufficient to determine which of the settlement models discussed above is the most applicable, or even whether the South Atlantic Slope inhabitants utilized the landscape differently than the people living to the west. There is, however, reason to believe that cross-drainage movement of people and materials was common in north Georgia. It is also fairly certain that Early Archaic groups in that region did not occupy all of the major and moderate-size drainages with the same intensity. This suggests that there may have been discrete socio-political territories that were surrounded by buffer zones and hinterlands. It is also apparent, however, that movement and exchange occurred across these peripheries on a fairly regular basis.

ABSOLUTE DATING

In Georgia, only two radiocarbon dates associated with Early Archaic material have been reported from sites north of the Fall Line. They are both derived from pit features encountered in the Palmer-Kirk/Bolen horizon at Furman Shoals (see above). The wood charcoal samples returned conventional radiocarbon ages of 9190±110 B.P. and 8730±50 B.P.

There are only two other reported dates from Georgia that are derived from secure Early Archaic contexts; both occur on the upper Coastal Plain near Augusta. A date of 9060±110 B.P. was obtained from a deeply buried stratum at Rae's Creek (9RI327) that contained Palmer-Kirk series hafted bifaces (Crook 1990). The Early Archaic horizon at Phinizy Swamp (9RI178) also contained Palmer-Kirk hafted bifaces; it was dated to 8953±51 B.P. (Elliott et al. 1994)

V. THE MIDDLE ARCHAIC PERIOD

The Middle Archaic period spans approximately three millennia (ca. 8000–5000 B.P.). It began as colonizing populations had expanded and settled into a stabilizing environment, and culminated in a complex political and social landscape created by the invention and manipulation of technological advancements that were primarily related to storage and food preparation.

Despite the achievements of people that allowed that process to unfold, many still view the Middle Archaic social landscape as unchanging, homogenous, and relatively simple. This chapter provides a perspective on Middle Archaic developments that is intended to counter that notion by illustrating the complexity and diversity of that era.

TYPOLOGY, CHRONOLOGY, AND TECHNOLOGY

Middle Archaic people manufactured and used implements that effectively exploited essentially the same resources as those targeted by Early Archaic populations. The functional nature of the Middle Archaic tool-kit, therefore, remained relatively unchanged over that of the preceding period. Resource distribution and seasonal availability appears to have been slightly different, however, and this is reflected in the way that Middle Archaic groups in north Georgia organized their technology and utilized the landscape in a way that can be distinguished from earlier periods. This shift is related to group mobility, and it was accompanied by a concomitant change in stylistic preferences with regard to hafted biface morphology.

The Middle Archaic hafted biface sequence for the Southeast is primarily derived from major excavations at Doerschuk (Coe 1964), Eva (Lewis and Lewis 1961), Icehouse Bottom (Chapman 1977), and Russell Cave (Griffin 1974). Projectile point typologies by Cambron and Hulse (1983), Justice (1987), and Oliver (1985), have also influenced Middle Archaic projectile point classification and chronology.

In chronological order, Southeastern Middle Archaic hafted biface types include Kirk Stemmed, Stanly, Morrow Mountain, Guilford, Sykes/White Springs, Benton, Allendale, and Brier Creek Lanceolate. Allendale hafted bifaces are similar to those of the Sykes/White Springs-Benton-Brier Creek continuum, and they appear to be morphological correlates that were used by the inhabitants of the central Savannah River valley during the latter stages of the Middle Archaic period (see below).

As discussed in the previous chapter, Kirk Stemmed hafted bifaces were produced by approximately 8800 B.P., during the latter portion of the Early Archaic period. They continued to manufactured until the very early portion of the Middle Archaic (ca. 7750 B.P.), and appear to predate Stanly points.

Kirk Stemmed hafted bifaces exhibit narrow to moderately broad blades that are isosceles in planview; the edges are sometimes serrated, and the stems are usually short with a straight base. These morphological charachteristics are quite variable within that descriptive universe, however, and unfortunately, many of these specimens resemble later types, particularly styles associated with late Middle Archaic and Late Archaic technology. Therefore, when found out of stratigraphic context, they are often misclassified as one of the later types. Conversely, it is very likely that these later types are frequently misclassified as Kirk Stemmed. The exceptions are examples with moderate to severe serrations, which is a definitive Early Archaic and early Middle Archaic trait.

Kirk Stemmed hafted bifaces have a wide distribution throughout most of the Southeast. They occur throughout north Georgia, but are not nearly as abundant as the earlier, corner notched varieties. In the Tallapoosa or Upper Ocmulgee survey areas, no Kirk Stemmed hafted bifaces were identified in the entire Phase I, II, or III (Upper Ocmulgee only) inventories. This point type is likewise absent from the Early and Middle Archaic components at the seven sites in the Rucker's Bottom, Abbeville, and Bullard groups along the Piedmont portion of the Savannah River that were excavated during the Russell Reservoir project (Anderson and Schuldenrein 1985).

Further, the number of Kirk Stemmed sites found in the Wallace Reservoir survey area is significantly reduced in comparison to the number of sites containing Palmer-Kirk series hafted bifaces (O'Steen 1983). Relatively few (n= 18) Kirk Stemmed points were recovered during the 1985-1986 Allatoona Survey as well; although that almost equals the number of Palmer-Kirk (n= 21) series hafted bifaces recovered during that project.

In terms of raw material, Kirk Stemmed points are often made of locally available lithics, especially quartz. This is a marked departure from earlier trends, which are characterized by a preference for high-quality chert, even when found in areas far from the source.

In many parts of the mid-South and Southeast, Stanly hafted bifaces replaced the Kirk forms by 7750 B.P. (Chapman 1977, 1985; Griffin 1974). Stanlys exhibit square stems with incurvate bases and relatively broad blades with straight edges. Specimens with shallow or non-existent base indentations sometimes occur. These specimens are very difficult to distinguish from Kirk Stemmed and later varieties, and it is suspected that identification errors are fairly common with regard to the Stanly classification.

The Stanly point type was originally described by Coe (1964) from his excavations at Doerschuk in the North Carolina Piedmont. More than 30 examples were discovered in a discrete stratigraphic zone below the Morrow Mountain levels. This prompted Coe to date the Stanly occupation at approximately 7000 B.P. (1964: 54). Radiocarbon dates on Stanly components obtained during subsequent excavations at Russell Cave and Icehouse Bottom demonstrated that Stanlys were being produced as early as 7750 B.P. (Chapman 1985; Griffin 1974). In addition, Coe (1964: 54) reports that four Kirk Stemmed hafted bifaces are included in the Stanly component at Doerschuk, indicating that Stanlys were manufactured earlier than his 7000 B.P. estimate. It also demonstrates that the two types were produced contemporaneously, and that there is a historical continuity between the cultures that produced Kirk Stemmed points and those that manufactured Stanly points.

In terms of geographical distribution, they are found throughout eastern and south-central Tennessee, northwestern Alabama, north Georgia, and the Piedmont Carolinas. Some of the largest Stanly components known to date, however, occur in northeastern Tennessee and south-central North Carolina (Chapman 1977; Coe 1964).

Similar forms have been recovered from as far away as Maine and New Hampshire. They are known as Neville points; as the name implies, the type site is Neville, which is located in southern New Hampshire (Dincauze 1976). The dates obtained from this stratified site are contemporaneous with the Stanly dates from the Southeast. This pan-Eastern Woodlands stylistic phenomenon is a continuation of the trend observed for most Paleoindian and Early Archaic styles, and it illustrates the geographical scope of information exchange by these early hunter-gatherers.

Stanly components occur in north Georgia, but the sites are infrequent, and usually small. No Stanly points were identified during the Tallapoosa or Upper Ocmulgee projects. The 1985-1986 Allatoona survey yielded 12 hafted bifaces collected from 11 sites (Ledbetter et al. 1987). The Wallace Reservoir survey area contained 28 sites (O'Steen 1983; O'Steen and Reed 1986). In the Upper Reservoir portion of the survey area, 23 Stanly points were recovered from 23 sites (O'Steen 1983). In the Barnett Shoals region of the Wallace Reservoir survey area, however, the five Stanly sites occurred in proximity, and many yielded multiple hafted bifaces (O'Steen and Reed 1986).

Stanly points are uncommon in the Piedmont Savannah River region as well; a maximum of 17 specimens were retrieved from a total of 12 sites within the purview of the Russell Reservoir project (Anderson and Joseph 1988). The number is probably smaller, since Stanlys were included within the larger set of hafted bifaces termed "bifurcates." That category conceivably includes LeCroy, St. Albans, and other forms that are typically associated with the late Early Archaic period. In any case, Anderson and Joseph (1988:152) note that Stanly points are rare occurrences compared to the frequency of other Middle Archaic types found within the project area.

Uwharrie rhyolites, as well as Carolina Slate Belt metavolcanics, orthoquartzite, and quartzite were commonly used to manufacture Stanly hafted bifaces. This is the case even in areas where quartz and/or chert is readily accessible.

For example, the Wallace Reservoir sample (n= 40) is comprised of 31 specimens (77.5 percent) that are manufactured from a Carolina Slate Belt quartzite sometimes referred to as "metaquartz." Seven examples (17.5 percent) are produced from metavolcanics, one is orthoquartzite (2.5 percent), and the remaining specimen (2.5 percent) is Coastal Plain chert. None of these materials are locally available, and all but the chert specimen are derived from sources to the north and east (O'Steen 1983; O'Steen and Reed 1986).

At Doerschuk, all of the examples are classified as rhyolite and andesite, which presumably originated from the nearby Uwharrie rhyolite sources (Coe 1964: 35).

The situation in the Russell Reservoir project area is slightly different, as quartz examples (n= 7; 41.2 percent) outnumber those made from metavolcanic rock (n= 6; 35.3 percent). Three (17.6 percent) points in the bifurcate/Stanly category were produced from Coastal Plain/Piedmont chert, and one (5.9 percent) is made from Ridge and Valley chert. As stated above, however, the actual number of Stanly points is unknown due to categorization procedures that did not distinguish between the bifurcate styles.

The Allatoona sample contains 12 specimens. It is also slightly different with regard to raw material utilization, as non-local sources were more prevalent. Four (33.3 percent) examples are Ridge and Valley chert, and four (33.3 percent) are "metaquartz;" neither rock type is found in the immediate vicinity. Four (33.3 percent) quartz specimens complete the inventory. Quartz is abundant in the Allatoona Reservoir region.

Morrow Mountain hafted bifaces, which are by far the most common Middle Archaic points encountered in north Georgia, are the next to appear in the archaeological sequence (Figure 5). According to currently available radiocarbon data, they were initially produced sometime around 7500 B.P. In some parts of the Southeast, particularly Georgia and South Carolina, they continued to be manufactured until at least 5700 B.P.

They have a very wide geographical distribution. Contemporaneous formal equivalents occur throughout the Southeast, along the Atlantic seaboard from Virginia through New Jersey, and as far north as Maine and New Hampshire, where they are known as Stark points (Coe 1964; Chapman 1985; Cross 1941; Dincauze 1976; Griffin 1974; Holland 1955).

One variety that Coe (1964) designated Morrow Mountain I (MM-I) exhibits short bases that are rounded or pointed; they have broad blades and straight to excurvate blade margins. Morrow Mountain II (MM-II) hafted bifaces exhibit long tapered stems with blades that are usually longer and narrower than the MM-I type.

Based on the their stratigraphic position at Doerschuk, Coe (1964: 43) postulated that MM-II was a "transitional form" that outlasted the MM-I technological tradition, and that the MM-II type appeared to be more prevalent in the mid-Atlantic coastal area. The chronological position of MM-II in relation to MM-I has yet to be firmly established, however, and some have attributed the differences to use-life stages rather than age (Cable 1982).

In terms of geographical distribution, MM-II forms appear to be more common along the Atlantic Slope than they are inland. While the large majority of Morrow Mountain points recovered from north Georgia west of the Savannah River are of the MM-I variety, MM-II specimens are the majority subtype in areas at or below the Fall Line. They are almost invariably manufactured from Coastal Plain chert in these regions. While additional data from the Coastal Plain and Coastal Zone are sorely needed to resolve the issue, this trend supports Coe's original contention that the MM-II subtype is part of a technological tradition primarily associated with societies inhabiting the coastal Atlantic region.

Morrow Mountain hafted bifaces are overwhelmingly associated with locally available sources. In north Georgia, quartz is ubiquitous and was the preferred raw material for hafted biface manufacture. Although Ridge and Valley and Coastal Plain chert specimens are present in areas where those materials are accessible, quartz is a significant contributor to hafted biface assemblages in those areas as well.

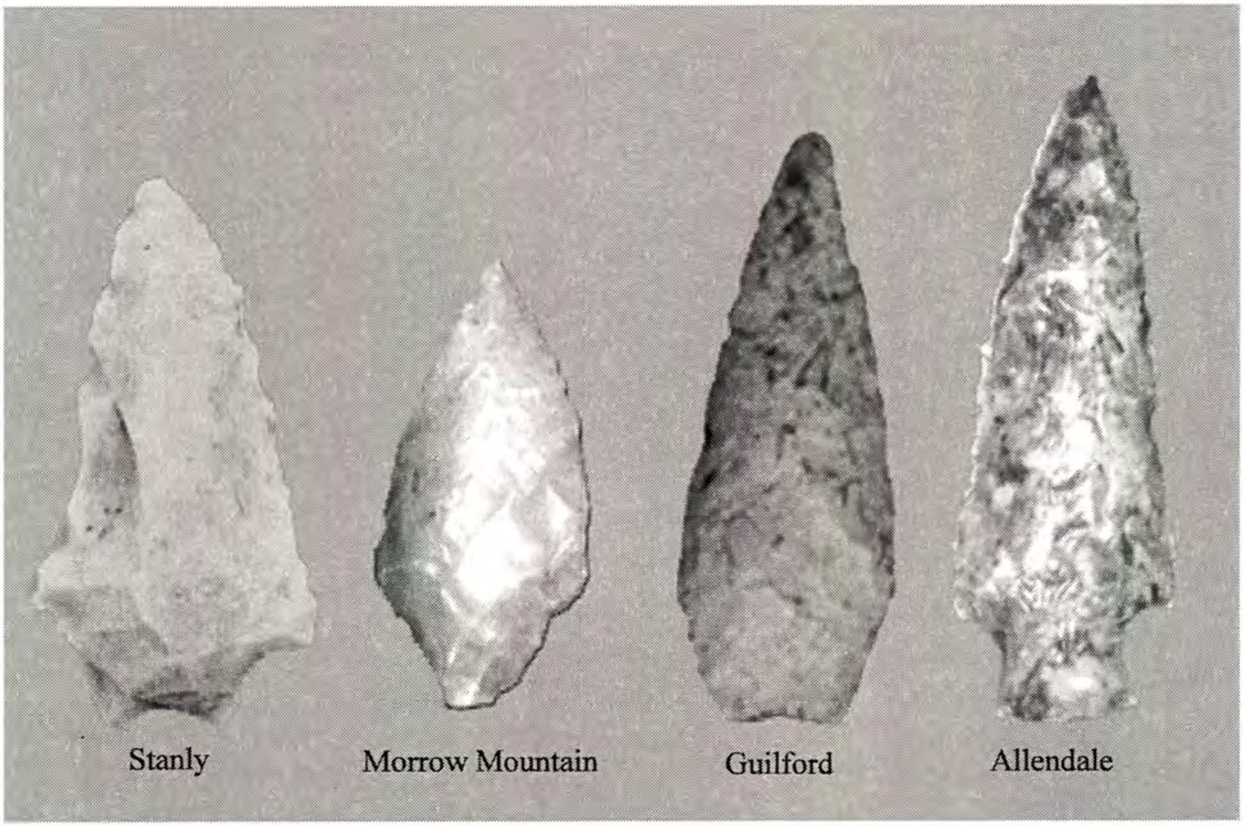

Figure 5. Middle Archaic Hafted Biface Types Found in North Georgia.

A large majority (96.4 percent; n= 348) of the 361 Morrow Mountain hafted bifaces in the Russell Reservoir collection are quartz. Of the 177 analyzed Morrow Mountain points obtained during the Wallace reservoir study, 98.3 percent (n= 174) are quartz. Most (95.7 percent; n= 22) of the Morrow Mountains recovered during the Big Haynes Reservoir project are also made from that material, as are a majority (78.3 percent) of the 23 examples found during the Allatoona Reservoir survey.

Note that the preference for quartz in the Georgia Piedmont is very similar to the results obtained by Blanton, in his study of Morrow Mountain hafted bifaces from the South Carolina Piedmont (Blanton 1983). A total of 399 hafted bifaces from that area were examined, and 383 (96.0 percent) are manufactured from local materials, which is primarily quartz. In fact, quartz appears to have been preferred in some areas where high quality chert is locally available (Benson 1995; Chapman 1977; see Sassaman and Anderson 1994: 169). This prompted Blanton (1983), and Blanton and Sassaman (1989), to postulate that quartz had intrinsic qualities that were preferred by Morrow Mountain populations.

Blanton and Sassaman (1989) theorized that the configuration of the Morrow Mountain haft element was created to allow the bifaces' easy insertion into a slotted or socketed shaft. This would facilitate reloading during a hunt, or replacing a tool after it lost its edge while being used as a knife, scraper, or some other implement.

Benson (1995) has offered another interesting opinion with regard to this preference for quartz. He notes that quartz is ubiquitous throughout the Piedmont, and suggests that people used this material, even in areas where chert was available, because it was a source of identification that was used as a "symbolic ticket" for passage from one physiographic province to the other (Benson 1995:14). Citing his experience in Somalia, he notes that people often recognized, and were more interested in, raw material origins than style. Although this line of reasoning is speculative at this stage, it is an intriguing avenue of inquiry that deserves further attention.

Guilford hafted bifaces were originally classified by Coe (1964: 43), after discovering several of these long, relatively narrow-bladed lanceolate points in the upper Morrow Mountain levels at Doerschuk. The Doerschuk examples are relatively well-made, and are manufactured from rhyolite and andesite. They exhibit straight, rounded, or slightly incurvate bases. Well-made specimens are relatively common in the Piedmont Carolinas, but most examples found within and outside that area are rather crudely shaped lanceolate forms produced from locally available materials.

These crude specimens are often classified as Guilfords even when found out of context. Since crude lanceolate bifaces were used throughout prehistory, this has led to ambiguity in the distribution of Guilford, and the practice has, in the author's opinion, led to a false perception of site frequency and geographical distribution. It appears that formal, well-made Guilfords were only produced in the Piedmont Carolinas and eastward. Middle Archaic lanceolate forms certainly occur outside that region, north Georgia included, but they appear to have been expedient devices that did not receive the stylistic attention attended to formal Guilfords.

Coe thought Guilfords were unconnected to Morrow Mountain technology, and attributed the specimens to an intrusive culture or technological tradition that originated to the west (Coe 1964: 54, 123). However, a feature discovered at site 38LX5 near Columbia, South Carolina contained 15 Middle Archaic hafted bifaces that represent both Morrow Mountain and Guilford technology (Anderson 1979). It is also common for the two types to co-occur in Middle Archaic assemblages throughout the geographical range of Morrow Mountain (e.g., Gunn and Wilson 1993). This indicates that the two point types are contemporaneous, and that they likely served in different capacities within the same tool-kit.

Raw material utilization parallels the trend associated with Morrow Mountain. With few exceptions, Guilfords are manufactured from materials that were locally accessible. In north Georgia, the vast majority of specimens are quartz. As alluded to above, many of the examples reported as Middle Archaic in origin, may not be attributable to that era.

Few Guilford dates have been obtained to date. Based on data compiled by Chapman (1985), Gunn and Wilson (1993), and others, Guilfords appear to have been manufactured from about 7000 B.P. until approximately 5300 B.P. That span includes all but the earliest portion of the Morrow Mountain phase, and places Guilford co-terminus with that phase. This lends further support to the contention that Guilfords and Morrow Mountains belong to the same technological tradition.

Sykes/White Springs, Benton, Allendale, and Brier Creek Lanceolate points represent a return to stemmed hafted biface technology by approximately 6500 B.P. (Bense 1987). Sykes/White Springs and Benton hafted bifaces are associated with central and western Tennessee, eastern Mississippi, and northern Alabama.

Sykes and White Springs are parochial terms for the same point type. The former name is associated with Tennessee examples (Lewis and Lewis 1961), and the latter is a term used in the Alabama literature (Cambron and Hulse 1983). Today, many researchers use the combined term Sykes/White Springs. These points are short to moderate-sized bifaces that exhibit short stems and relatively broad blades. Benton's exhibit similar morphology, but sometimes have narrow blades; the criterion originally used to distinguish them from the Sykes/White Springs type was the presence of beveled stem margins (Lewis and Lewis 1961). Recent research indicates that the Sykes/White Springs form—referred to by some as "stubby stemmed" points—may have also been popular among Middle Archaic groups residing in the Georgia Piedmont (Jerald Ledbetter and Scott Jones, personal communication, 2002). However, with the possible exception of the central Savannah River region, Benton forms were not produced in significant quantities by north Georgia's prehistoric inhabitants (see below).

Currently the Benton type includes examples with unbeveled stem margins, as well as incurvate and excurvate bases. The ambiguity between and among Benton and Sykes/White Springs morphology has somewhat confused the late Middle Archaic technological sequence. Chronological issues are equally ambiguous.

Futato (1983) reports evidence from northwest Alabama that Sykes/White Springs hafted bifaces may have been produced between approximately 6500-4000 B.P., while Bentons were manufactured for a much shorter interval (5700-5200 B.P.) that occurred during the middle of the Sykes/White Springs tradition.

Evidence from Mississippi, on the other hand, suggests that Sykes/White Springs originated in that area sometime between 6500 and 6100 B.P. (Amick 1987; Bense 1987; Stanyard, unpublished data). Benton technology was introduced about 6000 B.P., and continued until ca. 5300 B.P. Sykes/White Springs hafted bifaces co-occurred with Bentons until approximately 5700 B.P. when, according to Bense's data, manufacture of the former point type ceased.

Allendale hafted bifaces probably date to the late Middle Archaic period, and are morphologically similar to the Sykes/White Springs and Benton types. They occur at Fall Zone sites within the Savannah River drainage of eastern Georgia and South Carolina. Together with the Brier Creek Lanceolate, which is a stemmed lanceolate point that may be derivative of Guilford technology, the introduction of the Allendale form into that region may represent a direct historical connection to groups residing north and west of modern-day Georgia.

Additional data is needed, especially in intervening areas such as north Georgia, where Sykes/White Springs, Benton, *and* Allendale points are apparently uncommon. As Sassaman and Anderson (1994:28) point out, however, it is possible that the existing data reflect actual conditions. There may have been significant population and/or information movement between the two areas over a relatively short period of time that is not archaeologically detectable in the intervening territory (Sassaman 2000). If so, these events probably occurred during the final stages of Benton culture (ca. 5300-5000 B.P.).

Although none of the Sykes/White Springs-Benton-Allendale forms are common in north Georgia, it is important to understand their geographical and temporal relationships as it compares to that of the Morrow Mountain record. In north Georgia, there is direct radiocarbon evidence that people may have been producing Morrow Mountain points as late as 5600 B.P. (Espenshade et al. 1994). In South Carolina, a Morrow Mountain/Guilford level at Jefferson Bypass yielded evidence of occupation as late as 5300 B.P. (Gunn and Wilson 1993). Finally, a date as late as 4700±170 B.P. was obtained on material near a cache of Morrow Mountain and Guilford hafted bifaces at 38LX5 near Columbia, South Carolina (Sassaman and Anderson 1994).

Morrow Mountain technology all but disappears by about 6500 B.P. in areas where the Sykes/White Springs and Benton tradition became manifest. The apparent persistence of Morrow Mountain in north Georgia and parts of South Carolina for more than a millennia, and perhaps to as late as 4700 B.P., possibly indicates that these societies actively resisted by political means the socio-economic and political changes occurring to the north and west. If so, a concerted effort among Morrow Mountain groups may have been required. This implies that there was relatively strong inter-group cooperation among Morrow Mountain producers that could be sustained over long distances for an extended period of time.

However, as discussed below, the evidence does not support the assertion that complex, long-term alliances that carried significant political clout were present in the north Georgia region. Rather, social fluidity and frequent alliance restructuring appears to have been common. It may have been the "flexibility" afforded in this form of social organization that allowed people to survive and thrive without having to submit to cultures with a more structured political economy (Sassaman 1995).

This situation speaks to Sassaman and Anderson's (1994:28) point concerning the apparent lack of intervening occupations between the Sykes/White Spring and Benton "homeland" and the Allendale phase sites in Fall Zone environments of eastern Georgia and South Carolina. The introduction of northern point forms into the Fall Zone may have occurred by migrating people that either circumvented the Morrow Mountain "homeland," or passed through during times of decreased political tension. On that note, our current understanding of Morrow Mountain social organization suggests that territorial boundaries and peripheries were informal and relatively fluid; this is supported by the archaeological record of north Georgia, which includes small numbers of late Middle Archaic stemmed hafted bifaces that have been recovered throughout the region. The presence of these hafted biface types indicates that the political atmosphere was not always charged to the point where outsiders were unable to enter the region, or to establish cross-cultural alliances.

The issues of dominance, resistance, and interaction among Middle Archaic societies of the Southeast are intriguing and deserve attention (see Sassaman 1995). However, substantially more radiocarbon data and distributional evidence is required before they can be resolved with any degree of confidence.

Since they exploited essentially the same resource base, the Middle Archaic tool-kit contained the functional equivalents of most Early Archaic tool classes. Formal scrapers, drills, perforators, and knives (Guilfords?) continued to be manufactured and used, but expedient versions of these implements form a much larger portion of the tool inventory. This is especially so with regard to Morrow Mountain technology.

The weighted atlatl appears to have been be added to the technological repertoire sometime during the early portion of the Middle Archaic period. Coe reports the presence of semilunar atlatl weights in the Stanly horizon at the Doerschuk site (Coe 1964:52-53). This is the earliest secure evidence for weighted atlatl use in the region (cf. Lewis and Lewis 1961:66). Interestingly, there is no evidence that atlatls were used in the subsequent Morrow Mountain phase of north Georgia, though they reappear in later contexts.

The introduction of indirect soapstone cooking technology is another important technological achievement that occurred during the Middle Archaic. Until very recently, it was considered a purely Late Archaic manifestation, but Ken Sassaman (personal communication, 2000) is convinced that the Middle Archaic inhabitants at Mims Point were using soapstone nodules in that capacity. His data also suggest that there may have been a developmental sequence in soapstone cooking technology within the central Savannah River valley and surrounding area that includes, in order: nodules, pitted nodules, perforated nodules, and perforated slabs.

Axes and adzes are also present in Southeastern Middle Archaic assemblages. The most notable form is a chipped stone axe discovered in Guilford contexts at Doerschuk and Gaston (Coe 1964). Known as "Guilford Axes," these artifacts are relative large implements that appear to have been used for heavy-duty woodworking. The usually have a "waisted" appearance in planview, as they were hafted in the approximate center of the tool.

Although polished and grooved ground stone axes appear in the archaeological record by approximately 7000 B.P. in the Midwest, there is no evidence that they were manufactured or used in the Southeast prior to 5000 B.P. (Sassaman and Anderson 1994:26).

Expedient chipped stone tools were an integral part of the Middle Archaic lithic inventory, especially during the Morrow Mountain phase. Many of these tools are simply utilized flakes that were used and quickly discarded. They functioned as scraping and cutting devices, and were generally made by core reduction.

Although chipped stone expedient tools were commonly used during the Paleoindian and Early Archaic periods, they are thought to have been generally reserved for one-time tasks, and were not formalized according to stylistic convention. Formal chipped stone tools such as hafted bifaces, scrapers, drills, and knives were often curated, and frequently resharpened or refashioned.

Morrow Mountain technology, however, relied on a general strategy of expediency, even as it related to the tool categories curated by earlier groups. Morrow Mountain points, even in their most elaborate form, are relatively simple designs that can be fabricated very quickly. In addition, Blanton (1983) has demonstrated that maintenance of Morrow Mountain hafted bifaces occurred much less often than it did on the earlier Kirk and Stanly types, even when they were produced from high quality material.

Crudely fashioned ovate bifaces and knife-like objects are commonly found in relatively large numbers at Morrow Mountain sites, attesting to their expedient nature in both manufacturing effort and task life. Unfortunately, non-descript ovates are often classified as Middle Archaic in origin without corroborating diagnostic or radiometric evidence. This is also true of the lanceolate "knives" that are often uncritically categorized as Guilfords (see above). This practice has obfuscated the Middle Archaic record of north Georgia to some degree.

During the Morrow Mountain phase of north Georgia, groundstone tools were primarily limited to types that have been modified through use-wear. Artifacts in this category include manos, metates, nutting stones, and anvil stones. They have become polished, pitted, and scoured by food processing or indirect percussion.

Like those before and after them, the Middle Archaic inhabitants used a variety of cobble tools as well. Cobble tools were usually expedient; made of readily accessible raw material, they were collected, used, and discarded at or near the point of acquisition. These items were used for percussion, chopping, and grinding. Although quartz cobbles are the most common cobble tools, quartzite, granite, granitic gneiss, and mica schist were also utilized in this manner.

Lithics also continued to be important with regard to cooking technology. A detailed description of their role in this aspect of prehistoric life is detailed in the previous chapter. Their importance is evident from the many fire cracked rock clusters encountered at Middle Archaic sites.

The Eva site provides a rare glimpse into the organic aspect of Middle Archaic technology (Lewis and Lewis 1961: 75-101). The Eva inhabitants, and presumably their contemporary counterparts living elsewhere in the region, produced a wide variety of bone and antler tools and ornaments. These include projectile points, scrapers, awls, needles, fishhooks, necklaces, beads, and rattles. The Eva collection is a lucid reminder that the universe of prehistoric material culture is much more complex and expansive than is intimated by the collection of stone tools that constitutes the vast majority of the archaeological record.

In summary, the archaeological evidence clearly indicates that Morrow Mountain lithic technology was expedient and generalized. Sites occur on floodplains and terraces of major and moderate-sized rivers and streams; they also occur near smaller drainages in the uplands. Despite the differences in physical settings, the nature of the artifact assemblage is remarkably similar.

A comparison of site data from a variety of settings serves as a salient example of this phenomenon. The following results were obtained from the Big Haynes Reservoir and Georgia International Horsepark projects (Stanyard 1997; Stanyard and Stoops 1995).

The most intensively occupied Middle Archaic site was 9RO18, which is located on a terrace along Big Haynes Creek. It yielded 13 Morrow Mountain hafted bifaces, all of which were made of quartz. Unfortunately, all the non–feature-related cultural material collected from 9RO18 originated from the plow zone. Therefore, vertical and horizontal cultural stratigraphy was compromised. No Morrow Mountain features were identified, and the nondiagnostic cultural material associated with this occupation cannot be distinguished from assemblages attributable to earlier and later visits.

The strongest evidence concerning the nature of the Morrow Mountain occupation of the Big Haynes Reservoir project area was obtained from sites 9RO7 and 9RO20. The 9RO7 component existed immediately below a Late Archaic midden remnant that occurred on a small upland ridge nose. Although there was mixing at the interface of these two cultural horizons, many details concerning assemblage composition and raw material utilization during the Middle Archaic habitation were obtained.

Although the Middle Archaic artifact inventory from 9RO7 contains only 10 lithic tools, the assemblage is diverse. It includes four Morrow Mountain hafted bifaces, three bifaces, two retouched flakes, and one hammerstone. Debitage, fire cracked rock (FCR), and a large number of unaltered quartz cobbles also belong to the Middle Archaic component. The vast majority of artifacts are quartz, which is readily available throughout the project area. Ridge and Valley chert artifacts are limited to one retouched flake, one small core fragment, and nine pieces of debitage.

Two large rock cluster features containing unaltered quartz cobbles may be caches of unused heating and/or hearth stones. It is also possible that they are raw material caches, although there is no evidence that primary lithic reduction took place during this occupation. Fire cracked rock was present throughout the habitation area, but no isolated concentrations were found.

A diverse artifact assemblage was encountered in the Middle Archaic levels at 9RO24 as well. The Middle Archaic component on this second terrace consisted of Morrow Mountain and Guilford-like hafted bifaces, retouched flakes, cores, and fire cracked rock. The Ridge and Valley chert assemblage constitutes 1.3 percent of the inventory and consists of bifacial tools, retouched flakes, and a formal side-scraper. The remaining 98.7 percent of the lithics are quartz.

Quartz hafted biface manufacturing is evident, as is the production of expedient tools from quartz cobbles. Lithic reduction areas are discernible at four loci, but chert debitage is localized in only one of the four areas. Quartz tools were found throughout the site, not arranged in a discernible pattern. Chert tools, by contrast, were found only in places relatively devoid of debitage. This evidence suggests that chert tools were being used for special activities in designated use-areas, while quartz tools were involved in a variety of tasks that may or may not have been associated with specific locations.

There was a significant Middle Archaic presence at the Chase site (9RO53) and 9RO84 as well. The Chase site is situated on a broad terrace at the confluence of the Yellow River and Big Haynes Creek, while 9RO84 occurs on a floodplain of the Yellow River.

All six loci at Chase site, and a deeply buried component at 9RO84, contained debris associated with Morrow Mountain occupations; each was almost a mirror image of the other. Assemblages were small, but diverse; they consist of a few Morrow Mountain points, ovate bifaces, lanceolate bifaces, utilized flakes, and debitage. An expedient technology is evident and quartz was used almost exclusively (Stanyard and Stoops 1995).

In terms of north Georgia chronology, the nature of hafted biface distributions in concert with the available radiocarbon evidence suggests that the Morrow Mountain phase may have begun soon after Kirk Stemmed hafted bifaces went out of favor between about 7750 and 7500 B.P. It may have persisted until the end of the period (ca. 4,800 B.P.).

Although it is evident that groups associated with a different technology visited the region, or had contacts with the inhabitants, they do not appear to have played a significant and direct role in the historical developments of north Georgia. Of course, this perception may be radically altered as additional evidence is obtained. For now, however, the Middle Archaic of north Georgia can essentially be considered the history of the Morrow Mountain people.

SUBSISTENCE

Unfortunately, the subsistence base of Middle Archaic people living in the Southeast is known primarily from indirect evidence based on middle range and bridging arguments concerning the relationship among technological organization, settlement, and target resources. In the Southeast, significant quantities of subsistence remains from good contexts are rarely encountered in Middle Archaic contexts. Very few sites in the region have yielded direct zooarchaeological and ethnobotanical evidence, and the situation is even more pronounced with regard to north Georgia.

Faunal species that were likely targeted by north Georgia groups include large and small mammals, fish, birds, and reptiles. White-tailed deer was likely of primary importance as a source of food, clothing, and organic tools; they probably fulfilled a variety of other utilitarian and domestic needs as well. Although there is no direct evidence that they were intensively exploited, bison and woodland caribou inhabited the region during the Middle Archaic period, and it is likely that these animals were utilized in a similar manner.

In some regions, especially along the Tennessee River in Tennessee and Alabama, the Green River in Kentucky, and the Duck and Harpeth rivers in the Nashville Basin, freshwater shellfish was an important resource as well (Claassen 1996). These regions contain sites comprised of vast numbers of freshwater shellfish deposited during the Middle and Late Archaic periods. Until recently, the general view of these sites was that they had accumulated during centuries of repeated occupations by relatively small groups (see Milner and Jefferies 1998 for a review).

Recently, however, Claassen (1996) has argued that some accumulations are intentionally mounded "structures" that served as ceremonial burial monuments. These mounds often contain cemeteries with dozens of burials; more than 82 interments have been recovered from the Read site along the Green River (Webb 1950; Milner and Jefferies 1998), and 90 concentrated burials were discovered at Butterfield (Rolingson 1967). These are only two examples of many.

Sassaman (1995) has argued that, in some areas, shell mounds served as territorial markers to delineate boundaries and frontiers. In any case, it is likely that the shellfish were originally harvested for food purposes, despite the way in which they were ultimately used.

In north Georgia, shellfish exploitation does not appear to have been a significant activity until the Late Archaic period. This is puzzling, given the their extensive distribution throughout the region's larger rivers and streams.

In terms of botanical resources, hardwood mast such as acorn, hickory, walnuts, hazelnuts, chestnuts, and beechnuts were likely harvested in significant quantities. In fact, they were likely the primary source of carbohydrates, vegetable fat, and possibly calories (Gremillion 1996). A variety of weedy opportunistic species like chenopod, marshelder, and sunflower were also an important addition to the diet. They find disturbed floral communities favorable, and readily grew in and near human habitations (Asch and Asch 1985; Gremillion 1996).

In the north Georgia region, subsistence was probably achieved by frequent moves between generalized foraging zones that were selected according to the amount and diversity of available resources. Movement presumably occurred as seasonal rounds within a specified territory. Social boundaries are likely to have been fluid, however, and it is unlikely that the same sites were visited on a yearly basis, allowing resources to be replenished.

The Russell, Wallace, and Allatoona reservoir surveys illustrate the scope of the Middle Archaic exploitation zone, although there is very little contextual information that speaks to the nature or content of Middle Archaic assemblages.

Morrow Mountain hafted bifaces were discovered at 135 sites in the Russell Reservoir project area (Anderson and Joseph 1988). They occur in many types of physiographic settings, indicating that Morrow Mountain people probably exploited a wide variety of organic resources.

That pattern persisted in other major drainages as well. Slightly more than one-fifth (20.7 percent) of the 125 sites in the Wallace Reservoir study area occur on high terraces along the Oconee River, while more than one-fourth (27.1 percent) are situated in the Oconee uplands (Ledbetter et al. 1987: 196). The highest percentage (40.5 percent) of sites occurs in tributary uplands, and the remaining 11.7 percent are located on tributary terraces.

A total of 22 Morrow Mountain sites were identified during the 1985-1986 Allatoona Reservoir survey. Seventeen (77.3 percent) of the sites are situated in the alluvial zone, while the rest are along adjacent terraces and ridges (Ledbetter et al. 1987: 196-198).

Finally, in their summary of Morrow Mountain land-use patterns in the South Carolina Piedmont Blanton and Sassaman (1989: 59) state the following:

> The distribution of sites by elevation shows no major lacunae in location with respect to topography. This indicates that Middle Archaic sites are well-represented across the entire Piedmont elevation gradient from the Fall Zone foothills to the mountains of the Appalachians. Most Piedmont sites are located within 200 meters of running water and site frequency tends to drop off uniformly beyond this point. Nonetheless, substantial numbers of Middle Archaic loci are located 500 meters or more from water.

The latter two sentences relate to the nature of Mid-Holocene climate and the structure of biotic communities, which significantly influenced Middle Archaic subsistence practices. That is, based on the settlement data as it relates to subsistence, Morrow Mountain groups appear to have been exploiting areas (uplands) that hypothetically would not be very hospitable or productive during the warmer and dryer interval that was once thought to characterize Southeastern mid-Holocene environments. As discussed in Chapter II, however, the results of recent geomorphological (Leigh 1998; Leigh and Feeney 1995; Segovia 1985) and paleoenvironmental (Prentice et al. 1991; Seilestad 1994) studies indicate that the environment was actually warmer and wetter in some areas of the Southeast, which facilitated the persistence of a productive deciduous forest across the Georgia and Carolina Piedmont for the duration of the Middle Archaic period.

SETTLEMENT

It was initially postulated that Middle (and Late Archaic) settlement consisted of spring and summer residences along major rivers, a move to the upland hardwood zones in the fall, and a return to a riverine setting for the winter months (House and Ballenger 1976). Known as the Riverine-Interriverine settlement model, it was based on findings that showed upland Piedmont sites were numerous, small, and exhibited a low degree of technological diversity and occupation density. Sites of these types were thought to have functioned as resource extraction areas for the larger, more densely occupied sites along the major rivers. These sites tended to exhibit higher technological variability, suggesting that they were used for relatively long-term habitation.

Several subsequent studies have forced a reevaluation of the Riverine-Interriverine model of Middle Archaic settlement in the Piedmont (Anderson and Schuldenrein 1985; Cable et al. 1978; Goodyear et al. 1979; House and Wogaman 1978; Sassaman and Anderson 1994). It has become clear that Middle Archaic sites are widely distributed and that occupational density and technological variability are low regardless of location (see above).

In his master's thesis, Sassaman (1983) demonstrated that the Riverine-Interriverine settlement model was not consistent with the Middle Archaic archaeological record. Subsequent to that research, a new model of Middle Archaic settlement in the Piedmont, termed the Adaptive Flexibility model (Blanton and Sassaman 1989), has been developed and refined. The model is based on site function analyses in the vein of Binford's forager-collector scheme (Binford 1980) and social theoretical principles concerning the role that the forces of labor and production play in social organization.

It is thought that residences were moved frequently regardless of physical setting and time of year. An area was exploited from a central location until resources were depleted; then groups moved on to another, more advantageous location. This is in contrast to a strategy of establishing long-term base camps from which to launch short-term specialized extraction expeditions. Subsistence was generalized and social groups were small, mobile, and co-residential. Long-term investments and social obligations were probably kept to a minimum, ensuring that there were very few restrictions on group movement or fissioning (Sassaman 1993a). The result is a landscape dotted with sites of comparable size, occupation density, and artifact variability.

The fluidity, or "adaptive flexibility," of Middle Archaic social organization appears to have prevented long-term alliances or trade networks. This necessitated a reliance on local raw materials, a condition that reinforced the flexible nature of these groups. Since raw material (quartz) was ubiquitous, there was no way to restrict access. The abundance of raw material allowed functional tools to be made expediently and without special skills. Labor could not, therefore, be controlled. Labor intensification was not necessary either, since population levels were relatively low and the generalized subsistence economy could easily be maintained in the mid-Holocene environment of the Piedmont. Without the means to control labor and production, the social landscape of the Middle Archaic period became a stable environment consisting of small, relatively autonomous social groups that moved frequently but probably within the boundaries of specific territorial and social frontiers.

If so, the majority of non-local lithic material circulating in north Georgia during the Middle Archaic was probably acquired through indirect means, a network of trade alliances for example. Although some have speculated that high quality material (chert) was acquired by individual groups on their seasonal rounds (Blanton 1983), this was probably only practiced by people whose territory encompassed these resources. It is unlikely that many Piedmont groups ranged far enough on a regular basis to incorporate direct chert acquisition into their settlement scheme.

The nature of Middle Archaic chert utilization in the Big Haynes Reservoir and Georgia International Horsepark assemblages suggests that Ridge and Valley chert was acquired in a different form than was Coastal Plain chert. Both types are present in very low percentages. However, Ridge and Valley chert is manifest in small tools and a limited amount of debitage; hafted bifaces are rare (*n*= 1; 1.6 percent). This rock type often occurs in small nodules, and may have been traded in that state. This may account for its use in the production of small tools rather than hafted bifaces, whose size would be restricted by the physical properties of the raw material.

Coastal Plain chert, on the other hand, very often occurs in tabular form, and is much more suitable for manufacturing medium to large hafted bifaces. Since there is no concrete evidence of Coastal Plain chert hafted biface manufacture at Middle Archaic sites in these project areas, hafted bifaces (*n*= 5; 7.9 percent) were probably traded as complete specimens. It remains to be seen how this data relates to the rest of the north Georgia region.

ABSOLUTE DATING

Although radiocarbon dates obtained from Middle Archaic contexts in the Southeast outnumber that of the previous periods, only a few have been obtained from sites within the geographical purview of this study. The earliest secure Middle Archaic date in Georgia was obtained from Rae's Creek (9RI327), near Augusta (Crook 1990). A conventional date of 7400±90 B.P. (Beta-35185) was obtained from wood charcoal extracted from a midden containing Morrow Mountain hafted bifaces. Additional conventional dates from that site associated with Morrow Mountain points include an assay of 7070±100 B.P. (Beta-35186) and 6660±90 B.P. (Beta-35184)

Three dates with good Middle Archaic associations have been obtained from Mims Point, which is situated on the South Carolina side of the Savannah River in the Sumter National Forest (Ken Sassaman, personal communication, 2000). The oldest (5840±110 B.P.) is derived from a hearth that contained a quartz Morrow Mountain point. A date of 5730±70 B.P. was obtained from a burial feature that was associated with a "Morrow Mountain-like" preform, and wood charcoal from an earth oven was dated to 5680±60 B.P. The earth oven contained pitted soapstone nodules and quartz items that appear to be Morrow Mountain and Guilford preforms.

Webb (1994) reports a Morrow Mountain date of 6390±200 B.P. (Beta-64958) from Feature 9 at 9SP19, which is located in Spalding County. Charcoal recovered from a context yielding Morrow Mountain hafted bifaces at 9BL169 in Baldwin County, returned a conventional date of 5730±100 B.P. (Beta-71949) (Espenshade et al. 1994). Both of these sites are located in the southern portion of the Georgia Piedmont.

Finally, a deeply buried component at site 9HR94-97, which is situated on a floodplain along the Tallapoosa River in Haralson County, has been dated to 5800±60 B.P. (Beta-96621) (Stanyard and Pietak 1997). This northern Piedmont site did not yield Morrow Mountain hafted bifaces during Phase II testing, but it contained a distinctively quartz-biased assemblage that includes several ovate and lanceolate bifaces.

VI. THE LATE ARCHAIC PERIOD

The Late Archaic period (ca. 5000-3000 B.P.) was at the historical nexus of pre-contact social developments in the Southeast. Technological innovations that were adopted at this time, primarily as they relate to storage and cooking technology, provided a means to manipulate social reproduction in a manner that was fundamentally different from earlier periods. The social and political institutions created during this era provided a gateway to the more complex social landscape of subsequent times.

In north Georgia, Late Archaic developments included increases in the size and permanence of habitations, a marked expansion in trade, and a concomitant increase in surplus labor (Sassaman 1993a; 1996). Surplus items included soapstone bowls and cooking slabs, ceramic vessels, and possibly "bannerstones." These items were used to establish and secure bonds between groups and individuals through gift giving and reciprocation. Their production and distribution were also a means to achieve and express power by controlling access to important goods and services, and effecting the division of labor among and between groups. The power-relationships and socio-political upheavals that were borne from this milieu resulted in several episodes of population coalescence and dispersal.

These manifestations of Late Archaic society created a rich and extensive archaeological record that significantly overshadows that of the previous periods. Its proximity in time to the modern era also factors into that equation, as the remains have not been subjected to the forces of decay and dissipation for as long a period. As a result of these circumstances, our understanding of Late Archaic culture is much more robust than it is for the previous periods. This situation is reflected in the more detailed nature of the pages that follow.

The previous sections on the Early Archaic and Middle Archaic periods were dealt with in a monolithic fashion that described and discussed general trends associated with the period as a whole. This was necessary because the general database is much smaller, chronological control is very weak, and there is an overall lack of high resolution, site specific data that can be compared on a local and regional basis.

The substantial archaeological record of Late Archaic culture, on the other hand, is framed with a large number of secure radiocarbon dates that allows us to paint the Late Archaic picture with a much thinner brush. Therefore, the organization of this chapter has been altered from that of the two previous chapters in an attempt to provide a comprehensive, integrated overview of this complex episode of prehistory.

HAFTED BIFACE TYPOLOGY AND CHRONOLOGY

The hafted biface most commonly associated with the Late Archaic period in Georgia is the Savannah River point. These types are large with a straight or slightly contracting stem, straight base, and triangular blade; slightly indented bases sometimes occur (Figure 6). They

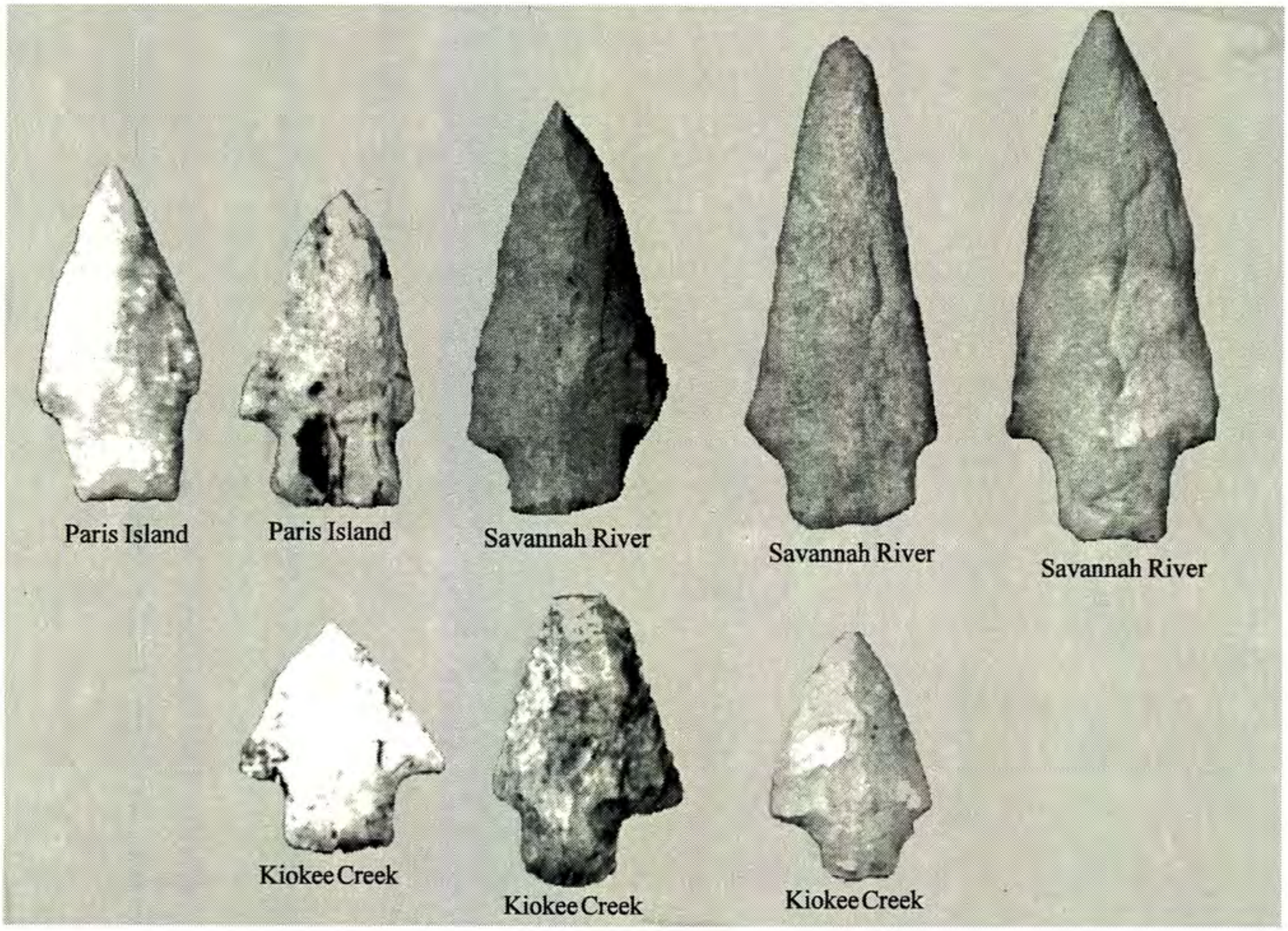

Figure 6. Late Archaic Hafted Biface Forms Found in North Georgia.

are associated with the Late Archaic broad-spear tradition that spanned the eastern Woodlands; that tradition includes such types as Appalachian Stemmed, Susquehanna, Perkiomen, and Koens-Crispin.

The term Savannah River is often used as a generic reference to straight-stemmed Late Archaic hafted bifaces. However, when this point type was first classified by Coe (1964), he was referring to a specific type of large, broad-bladed, square-stemmed hafted biface that he had encountered in large numbers at the Doerschuk and Gaston sites in Piedmont North Carolina. These classic Savannah River points are now thought to post-date the Paris Island variety, appearing in the archaeological record at about 4200 B.P. (Elliott et al. 1994; see below). It was originally thought that Savannah Rivers denoted the inception of the Late Archaic period. "Classic" Savannah river points are primarily associated with the Mill Branch and Black Shoals phases, which will be discussed at length below.

Most other Late Archaic hafted biface types found in north Georgia follow the general theme of Savannah River morphology, the only difference is a reduction in size (see Figure 6). Type names include Paris Island, Otarre, and Kiokee Creek (Bullen and Greene 1970; Cambron and Hulse 1983; Chapman 1981; Coe 1964; Elliott et al. 1994; Harwood 1973; Keel 1976; Sassaman 1985; Whatley 1985). Like Savannah Rivers, they are all characterized by triangular blades, straight or slightly contracting stems, and straight bases.

Paris Island Stemmed hafted bifaces are small to medium points that were produced near the beginning of the Late Archaic period between approximately 4500 and 4200 B.P. (Elliott et al. 1994; Whatley 1985). They exhibit triangular blades, a slightly expanding stem, and a straight or rounded base. As the name implies, they are associated with the Paris Island phase of the Late Archaic period (see below).

Ottare points are sometimes referred to as a Small Savannah River because they are simply diminutive examples of the classic form (Keel 1976; Oliver 1985). Their chronological position is unclear, but since they appear in the ceramic bearing strata of Stallings Island above the classic Savannah river points, it has been assumed that they post-date those types.

However, Alterman (1987) cogently argued that the Otarre form may be a result of the artifact's use-life stage, raw material composition, and intended function. Therefore, the Otarre may not be a sensitive chronological marker.

Finally, Kiokee Creek hafted bifaces are small to medium-sized tools that also resemble Savannah River points. As discussed below, they are associated with the widespread adoption of ceramic technology and the intensification of shellfish exploitation that occurred during the Stallings culture occupation of the Savannah River valley.

GENERAL SUBSISTENCE PRACTICES

In terms of subsistence, a wide variety of large and small mammals, reptiles (including sea turtle), birds, and amphibians have been recovered in Late Archaic contexts. Shellfish were very important to Late Archaic populations that inhabited and/or exploited the coast and major drainage systems, as evidenced by the large shell middens at Stallings Island (Claflin 1931), Bilbo (Williams 1968), St. Simons Island (Holder 1938), and elsewhere. The recovery of bone fishhooks and foreshafts at these and other sites indicates that fishing was also important.

A broad spectrum of plant materials was used for sustenance, medicine, fabric, and construction. There is no conclusive evidence for sustained horticulture in Late Archaic societies in the Southeast, although the growth of opportunistic plants such as chenopod, marshelder, sunflower, and possibly cucurbits was likely encouraged to the point where it could be described as gardening horticulture.

TECHNOLOGICAL VARIATION IN LATE ARCHAIC SOCIETIES OF NORTH GEORGIA

In recent years, archaeologists have begun to identify changes in stylistic and raw material preferences through time in Late Archaic lithic assemblages from the northern and central Savannah River drainage (Anderson and Joseph 1988; Elliott et al. 1994; Ledbetter 1995; Sassaman 1993a, 1993b; Stoltman 1974). The result has been tentative chronologies of technological change expressed in terms of phases and complexes.

One of the first schemes, offered by Elliott et al. (1994:370–372), is based on lithic and ceramic technological developments, settlement choice, architecture, and mortuary practices along the central and northern Savannah River drainage. Lithic and ceramic technology attributes of the specific Late Archaic phases and/or complexes proposed by Elliott are summarized in Table 1.

Although designed as a heuristic device to accommodate the archaeological record of the Savannah River valley, Elliott's chronology has helped focus Late Archaic research both within and beyond that region. As additional data has accumulated, two of those formulations—the Paris Island and Mill Branch phases—have crystallized into very well defined archaeological concepts that temporally and geographically bind specific cultural expressions within the Savannah River catchment.

The three other designations—Phinzy Swamp Complex, Lovers Lane Phase, and Dickens Complex—have been proven to be too broad in scope. However, they have been useful for comparing and contrasting archaeological data within each of the time spans assigned to them. This is especially so in the case of the Lovers Lane phase, which is now considered to encompass both "classic" Stallings culture and the two centuries after its demise.

Extensive research efforts in the central and upper Savannah River valley over the last decade has resulted in the most refined Late Archaic cultural sequence in the Southeast for the period between ca. 4500 and 3500 B.P. Specific cultural entities have become archaeologically visible, and episodes of immigration, emigration, and enculturation are apparent. These historical events centered on the hegemonic rise of Stallings culture, and its eventual decline.

The Savannah River data maintains some relevance outside of the drainage, as population movement into and out of the area during that 1,000-year span had an effect on cultural

Table 1. Chronological Markers in Lithic and Ceramic Technology Proposed by Elliott et al. (1994) for the Late Archaic Period in the Central Savannah River Drainage.

Phase/Complex	Date Range (B.P.)	Lithic Technological Characteristics	Ceramic Technological Characteristics
Phinizy Swamp Complex	5500–4500	Brier Creek, Allendale, and Guilford PP/Ks Utilization of metavolcanics, chert, and quartz for PP/K manufacture	Introduction of clay cooking technology
Paris Island Phase	4500–4200	Small–medium-sized, stemmed PP/Ks Utilization of metavolcanics, chert, and quartz for PP/K manufacture Intensive use of perforated soapstone slabs	Ceramics nearly absent
Mill Branch Phase	4200–3450	Large 'classic' Savannah River PP/Ks dominate PP/K assemblage 'Cruciform' drills Metavolcanics are dominant raw material for PP/K manufacture Intensive use of perforated soapstone slabs continues	Limited use of Stallings Island plain ceramics
Lovers Lane Phase	3850–3350	Small–medium-sized, stemmed PP/Ks PP/K manufacture: a shift from metavolcanics to quartz in terms of preference, use of chert increases Perforated soapstone slab use decreases	Wide use of Stallings Island plain and punctate ceramics
Dickens Complex	3350–2900	Continuation of trends observed during Lovers Lane phase, with an increase in soapstone bowl manufacture and use	Diverse ceramic technology

* Adapted from Elliott et al. (1994:370–372).

developments elsewhere in Georgia and the Carolinas. In terms of this study, the areas most affected are the upper Oconee, Alcovy, and upper Ocmulgee river drainages, which apparently became the destination of disenfranchised Savannah River groups that declined or were denied participation in Stallings culture. This assertion is partially based on data collected from large projects at the headwaters of the Ocmulgee River that have been completed in recent years (Stanyard 1997, Stanyard and Pietak 1997; Stanyard and Stoops 1995). A significant amount of data has also been obtained from projects within the Oconee and Alcovy river basins as well (O'Steen et al. 1994; Wauchope 1966; Webb 1989).

Based on the most recent research available, the following cultural sequences and their historical relationships are proposed for eastern and central Georgia north of the Fall Zone for the period between 4600 and 3500 B.P. (Table 2). Developments that occurred in the centuries immediately prior and subsequent to that span are obviously an integral part of Late Archaic history, but details remain enigmatic due to a general lack of information specific to these time periods, particularly in terms of radiocarbon evidence. In western and extreme northern Georgia, the

Table 2. Proposed Cultural Sequence for the Late Archaic Period of North Georgia.

Phase	Temporal Range	Geographical Range	Technology	Economy	Historical Relationships
Undifferentiated	5000-3850 B.P.* 5000-3000 B.P.**	* Central Piedmont **Western Piedmont, Appalachian Plateau, Ridge and Valley, and Blue Ridge provinces. (A cultural sequence for this region has yet to be defined.)	*Stemmed hafted biface tradition is adopted; minimal ceramic use beginning ca. 4000 B.P.; soapstone cooking and storage technology absent ** Stemmed hafted biface tradition is adopted; ceramic technology is in use by ca. 3500 B.P.; soapstone bowl technology is adopted by ca. 3600 B.P.	Logistical generalized hunting and gathering	This appears to have been a period of transition from Morrow Mountain cultural expressions to those associated with the broad-blade tradition that encompassed most of the eastern Woodlands by 4500 B.P.
Allendale	5000-4600? B.P.	Eastern Piedmont/Savannah River region	Brier Creek and Guilford? lanceolates; Benton-like stemmed hafted bifaces; modified soapstone nodules are used for indirect heating; ceramic technology absent	Logistical generalized hunting and gathering; possible intensified exploitation of fish and shellfish	This is an archaeological expression that was likely restricted to the central and upper Savannah River valley. It may be an extension of the Benton influence from Tennessee.
Paris Island	4600-4200 B.P.	Eastern Piedmont/Savannah River region	Small broad-bladed stemmed hafted bifaces; soapstone slabs; distinctive form of atlatl weight known as a "Southern Ovate" is used; ceramic technology is absent	Logistical generalized hunting and gathering; intensive exploitation of fish and shellfish; more permanent use of riverine environments	Paris Island may be derived from the Benton-influenced technology that appeared in the Savannah drainage by ca. 5000 B.P.
Mill Branch	4200-3850 B.P.	Eastern Piedmont/Savannah River region	Large "classic" Savannah River hafted bifaces; cruciform drills; winged bannerstones; perforated soapstone slabs; metavolcanics are the dominant raw material for hafted biface manufacture	Logistical generalized hunting and gathering; intensive exploitation of fish and shellfish; semi-permanent use of riverine environments until ca. 4000 B.P.; a shift to an upland focus occurs after that time	The Mill Branch phase probably represents the ethnogenesis of a specific cultural entity whose members had antecedents in groups associated with the Paris Island phase.

Table 2. Proposed Cultural Sequence for the Late Archaic Period of North Georgia continued.

Phase	Temporal Range	Geographical Range	Technology	Economy	Historical Relationships
Black Shoals	3850-3450 B.P.	Central Piedmont	Large "classic" Savannah River hafted bifaces; cruciform drills; winged bannerstones; modest use of fiber-tempered ceramics; perforated soapstone slabs are uncommon; soapstone bowl use is established; metavolcanics are the dominant raw material for hafted biface manufacture	Logistical generalized hunting and gathering; emphasis is placed on upland settings near moderate to large streams and rivers	The Black Shoals phase is derived from Mill Branch culture, and probably represents the permanent expulsion and/or emigration of Mill Branch groups out of the Savannah River valley into the surrounding region.
Stallings	3850-3450 B.P.	Eastern Piedmont/Savannah River region	Small–medium-sized, broad-bladed stemmed hafted bifaces; soapstone slabs; fiber-tempered ceramics; drag and jab motif dominant surface treatment on ceramics; chert and quartz replace the dominance of metavolcanics for hafted biface manufacture	Logistical generalized hunting and gathering; intensive exploitation of fish and shellfish; riverine environments are primary focus	Stallings culture arrived from the Coastal Plain by about 4000 B.P. and became permanently established in the middle Savannah River region by ca. 3850 B.P. The participants in Stallings culture, whether they immigrated into the region or were local inhabitants that adopted the institutions of Stallings, appear to have forced Mill Branch groups out of the middle Savannah River drainage.
Undifferentiated Post-Stallings	3450-3000 B.P.	Eastern Piedmont/Savannah River region; Central Piedmont	Small, medium, and large, broad-bladed stemmed hafted bifaces; ceramic technology improves and becomes widespread; soapstone use diminishes significantly by ca. 3200 B.P.	Logistical generalized hunting and gathering; settlement preferences have yet to be specified.	The demise of Stallings and Mill Branch/Black Shoals culture undoubtedly had major historical implications with regard to terminal Late Archaic social developments. However, specific cultural entities and technological traditions have not yet been identified, and the social landscape appears fairly homogeneous at the current level of resolution. A more detailed perspective on this important era can only be obtained with additional research.

entire Late Archaic sequence remains undifferentiated because there has been no comprehensive attempt to integrate and synthesize data derived from research conducted in those regions.

Undifferentiated Phase
(Central Piedmont)

This category refers to aspects of the Late Archaic sequence for the central Piedmont that have not been defined according to specific archaeological constructs. It applies to the period of time between 5000 and 3850 B.P. in a region that occurs primarily within the Oconee and Upper Ocmulgee river catchments.

The stemmed broad-blade hafted biface tradition that spread across the eastern Woodlands had become manifest across North Georgia during this time. Morrow Mountain culture was rendered archaeologically invisible when the new hafted biface styles were adopted, but there is no convincing evidence that this change in stylistic preference coincided with an "immediate" and dramatic shift in technology, settlement, and other organizational aspects of the Morrow Mountain tradition.

The generalized foraging strategy adopted by Morrow Mountain groups probably continued into the early portion of the Late Archaic period in this region. By about 4200 B.P., however, subsistence and other economic needs were met through a more logistical approach to settlement. Relatively long-term settlements were established, especially along larger drainages and their tributaries, and used as staging areas for specialized forays into the surrounding countryside. Regularly scheduled harvests of seasonal resources within specified territories apparently became more common during this era. In addition, the exploitation of some targeted resources—fish and shellfish for example—intensified.

Ceramic technology may have been introduced by approximately 4000 B.P., but pottery was used on a very minimal basis. Soapstone cooking and storage implements do not appear to have been utilized at all. By contrast, ceramics were regularly used by groups within the Savannah River catchment after 4200 B.P., and they had been utilizing soapstone for indirect cooking since the latter portion of the Middle Archaic period.

Undifferentiated Phase
(Western Piedmont, Appalachian Plateau, Ridge and Valley, and Blue Ridge)

Although a significant number of Late Archaic sites have been identified in the western sections of the north Georgia Piedmont, particularly along the Chattahoochee (Cantley and Joseph 1991; Hally and Rudolph 1982), Etowah (Ledbetter et. al 1987), and Tallapoosa (Gresham 1990; Stanyard and Pietak 1997) rivers, a lack of radiocarbon evidence precludes the development of a detailed cultural sequence for that region. Therefore, our current perspective on Late Archaic (ca. 5000-3000 B.P.) developments for that portion of Georgia is rather monolithic.

The same is true for the extreme northern Piedmont, Blue Ridge, Ridge and Valley, and Appalachian Plateau provinces, where a general lack of information impedes our ability to properly assess the nature of Late Archaic developments in those regions. A concerted effort should be made to obtain additional data on the Late Archaic in all of these areas, with the goal of developing a cultural sequence similar to those devised for the eastern and central Piedmont. Our understanding of regional developments will be vastly improved once that is accomplished, and it will be possible to create a more integrated, detailed history of this complex period.

As was the case in the central Piedmont, Morrow Mountain hafted biface styles fell out of favor by the beginning of the period and were replaced with stemmed broad-blades, which served as functional equivalents. Economic strategies were altered from foraging-based systems to approaches that primarily relied on logistical collecting. Resource intensification also occurred in some cases. As these new systems were put into effect, settlements became more permanent.

Late Archaic stemmed points are common occurrences, and they are often associated with soapstone bowls (Ledbetter et al. 1987; Stanyard and Pietak 1997). Fiber tempered ceramics are exceedingly rare, however. No fiber-tempered pottery was recovered during Phase I and Phase II investigations within the Tallapoosa Reservoir project area, and only one sherd is reported from the Allatoona surveys (Ledbetter et al. 1987: 211; Stanyard and Pietak 1997).

Ceramic technology was not adopted in western and extreme north Georgia until the latter portion of the period, perhaps as late as 3500 B.P. Even after its introduction, the archaeological evidence suggests that pottery was not a significant aspect of material culture. Although ceramic-bearing Late Archaic components are fairly common in the region, the quantity of sherds discovered at these sites is usually very low.

People living in the area participated in the pan-regional soapstone trade that appeared in the region by about 3600 B.P. Soapstone utilization was limited to bowl manufacture, however, as the soapstone cooking slab industry that was prevalent in the Savannah River region never reached western or extreme northern Georgia. Soapstone bowl use had been dramatically curtailed by the end of the period.

Twenty-three sites with Late Archaic components were excavated during Phase II of the Tallapoosa project (Stanyard and Pietak 1997). Occupations occurred throughout the study area, but two clusters are evident. A small cluster of four sites is present in the central section, while 14 sites are concentrated in the southern portion of the project area (Figure 7).

Both areas contained sites that are interpreted to be multi-household, possibly seasonal, occupations that are surrounded by smaller "satellite" encampments or specialized extraction locales. This pattern suggests that Late Archaic groups in western Georgia, and perhaps extreme northern Georgia, were organized in a fashion similar to that of those living in the eastern and central Piedmont province.

Allendale Phase
(Eastern Piedmont/Savannah River Region)

As discussed in the previous chapter, a distinctive archaeological phenomenon occurs within the central Savannah River drainage that is characterized by the appearance of stemmed and lanceolate hafted biface forms that have correlates in the Sykes/White Springs-Benton and

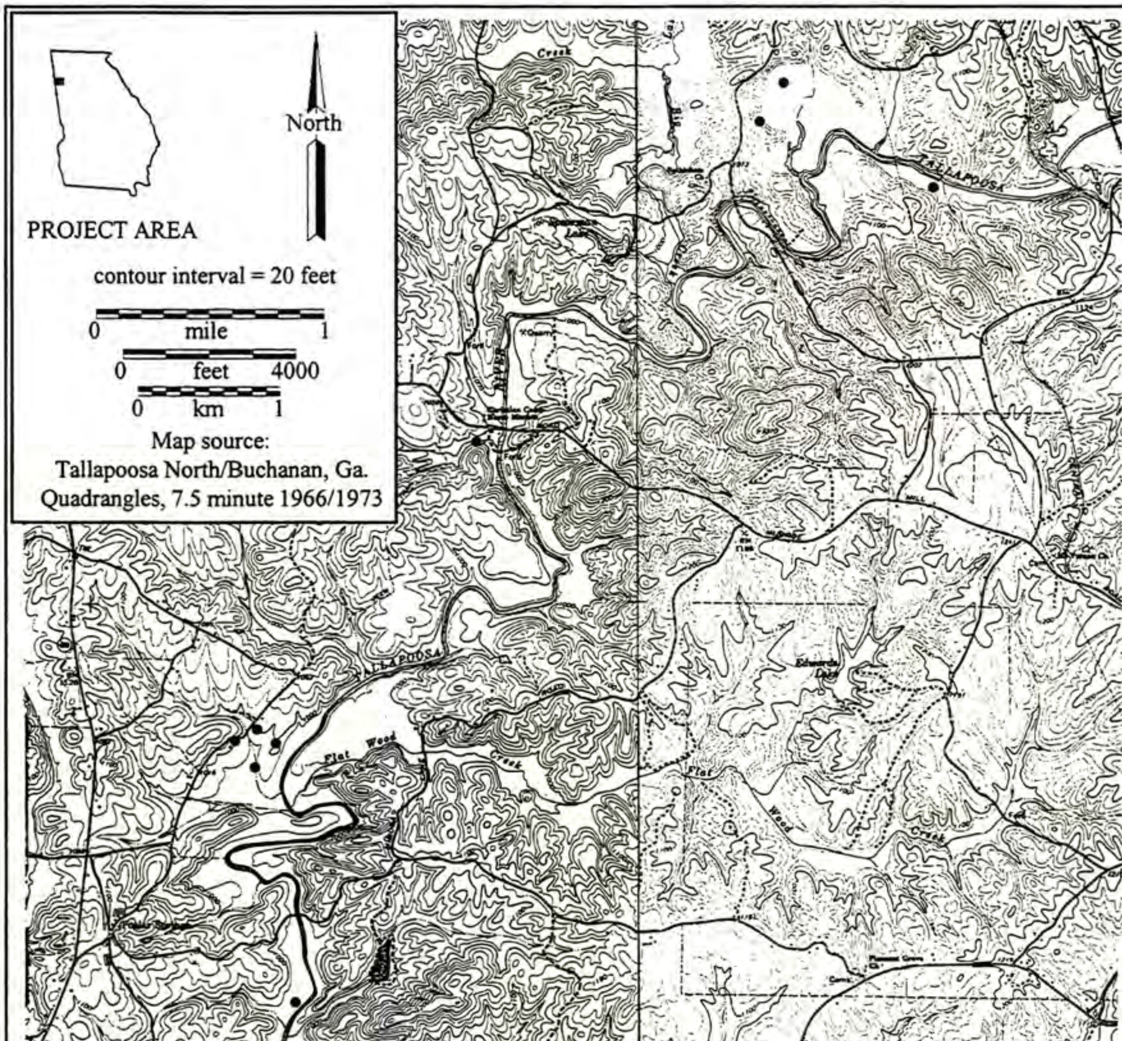

Figure 7. Late Archaic Period Components Identified in the proposed Tallapoosa Reservoir Project Area.

possibly Guilford, technological traditions. This archaeological manifestation, known as the Allendale phase, is primarily restricted to the Savannah River catchment. It probably began sometime between 5300 and 5000 B.P., and persisted until perhaps as late as 4600 B.P. Although new ideas concerning hafted biface morphology were apparently imported, the long-standing local tradition of using soapstone nodules as indirect cooking implements remained an established part of the technological repertoire.

Very little is known about non-technological aspects of the Allendale phase. Settlement was likely geared towards generalized logistical hunting and gathering. Fish and shellfish exploitation may have intensified, creating a need for larger and perhaps more permanent settlements along the more significant river and stream systems. It is assumed that upland and other types of interriverine environments were also exploited to some degree.

Historically, this cultural expression may be an extension of late Benton culture, whose influence was waning elsewhere in the region. It is possible that disenfranchised or expelled Benton groups moved down the Savannah River corridor and established settlements among those of the local residents, who eventually adopted the new hafted biface forms. Information and ideas may also have been disseminated through formal or informal alliances between Benton groups to the north and the local Savannah River residents without a significant emigration from the Benton "homeland." Regardless, ideas embedded in Benton culture very likely influenced the history of the Savannah River region during the Middle Archaic-Late Archaic transition.

Paris Island Phase
(Eastern Piedmont/Savannah River Region)

The Paris Island phase is associated with the appearance of small-stemmed hafted bifaces referred to as Paris Island Stemmed. Based on the distribution of this point type, the Paris Island phase appears to be a localized phenomenon associated with the central Savannah River valley that existed between approximately 4600 and 4200 B.P. The innovations that made their first appearance in that region at this time and place quickly spread to adjoining areas, however, and were fully expressed in the subsequent Mill Branch and Black Shoals phases. These innovations include the widespread manufacture of atlatl weights and the production of perforated soapstone slabs that were used for indirect heating. The slabs apparently replaced soapstone nodules in that capacity. Ceramic technology had yet to be introduced.

The Paris Island phase may be a technological expression that was developed by the ancestors of settlers along the Savannah River that fell under the Benton influence during the Middle Archaic-Late Archaic transition. Although technological differences are apparent, there does not appear to have been a significant change in settlement organization or subsistence economy. The exception may be an increased reliance on fish and shellfish, or at least intensified exploitation of these resources.

Mill Branch and Black Shoals Phases (Eastern and Central Piedmont)

Beginning at approximately 4200 B.P., the inhabitants of the central Savannah River valley had developed a very distinctive lithic technology that is the hallmark of the Mill Branch phase. This aspect of that region's history also included the advent of pottery manufacture, an industry that appears to have been introduced upriver from the Coastal Plain and Coastal Zone. The ties that fostered the transfer of this technology soon developed into a strong historical connection that eventually led to significant social, economic and technological changes that were fully expressed as Stallings culture by about 3850 B.P.

In adjoining regions of the Piedmont, particularly those to the west, Mill Branch technology continued to be utilized for approximately 400 more years, until ca. 3450 B.P. The archaeological evidence indicates that the Mill Branch phase disappeared from the Savannah River region by 3850 B.P., and does not appear in adjacent areas until very near or after that date. Despite the material similarities, there is a clear chronological break in terms of the geographical distribution of Mill Branch traits. In order to distinguish between the two expressions, a separate phase designation—the Black Shoals phase[4]—is offered to distinguish the later manifestation from the earlier. Therefore, the revised cultural chronology places the Mill Branch phase between 4200 and 3850 B.P., while the Black Shoals phase is dated 3850 to 3450 B.P. (see Table 2).

The Mill Branch and Black Shoals phases are inextricably linked with regard to material culture and the social relationships that are evident in its spatial and chronological distribution. Therefore, the following discussion focuses on both archaeological constructs in order to emphasize their strong historical connection. It is based on comparative data primarily obtained from the Big Haynes Reservoir, Georgia International Horsepark, Wallace Reservoir, Mill Branch, and Bobby Jones Expressway projects (Elliott et al. 1994; Ledbetter 1995; Stanyard 1997; Stanyard and Stoops 1995;). Other relevant research pertaining to the Savannah River drainage was also reviewed (e.g., Brooks and Hanson 1987; Sassaman and Anderson 1994; Wood et al. 1986).

The Mill Branch data is derived from the Mill Branch (Ledbetter 1995); Bobby Jones Expressway (Elliott et al. 1994); Russell Reservoir (Wood et al. 1986), and several other projects that have received considerable attention in the literature.

More recent investigations associated with the Big Haynes Reservoir and Georgia International Horsepark data recovery projects in Rockdale County, Georgia, illustrated that there was a strong Late Archaic presence in the Upper Ocmulgee watershed (Stanyard 1997; Stanyard and Stoops 1995). Six of the seven sites excavated during those investigations were occupied during the Black Shoals phase of the Late Archaic period; the other (9RO18) was probably visited during the undifferentiated post-Stallings phase (Figure 8 and Table 3).

[4] The term "Black Shoals" is derived from the Black Shoals Reservoir (formerly known as Big Haynes Reservoir) in Rockdale County Georgia. A significant amount of archaeological data concerning this period of Late Archaic history was obtained from excavations conducted in conjunction with the construction of that lake.

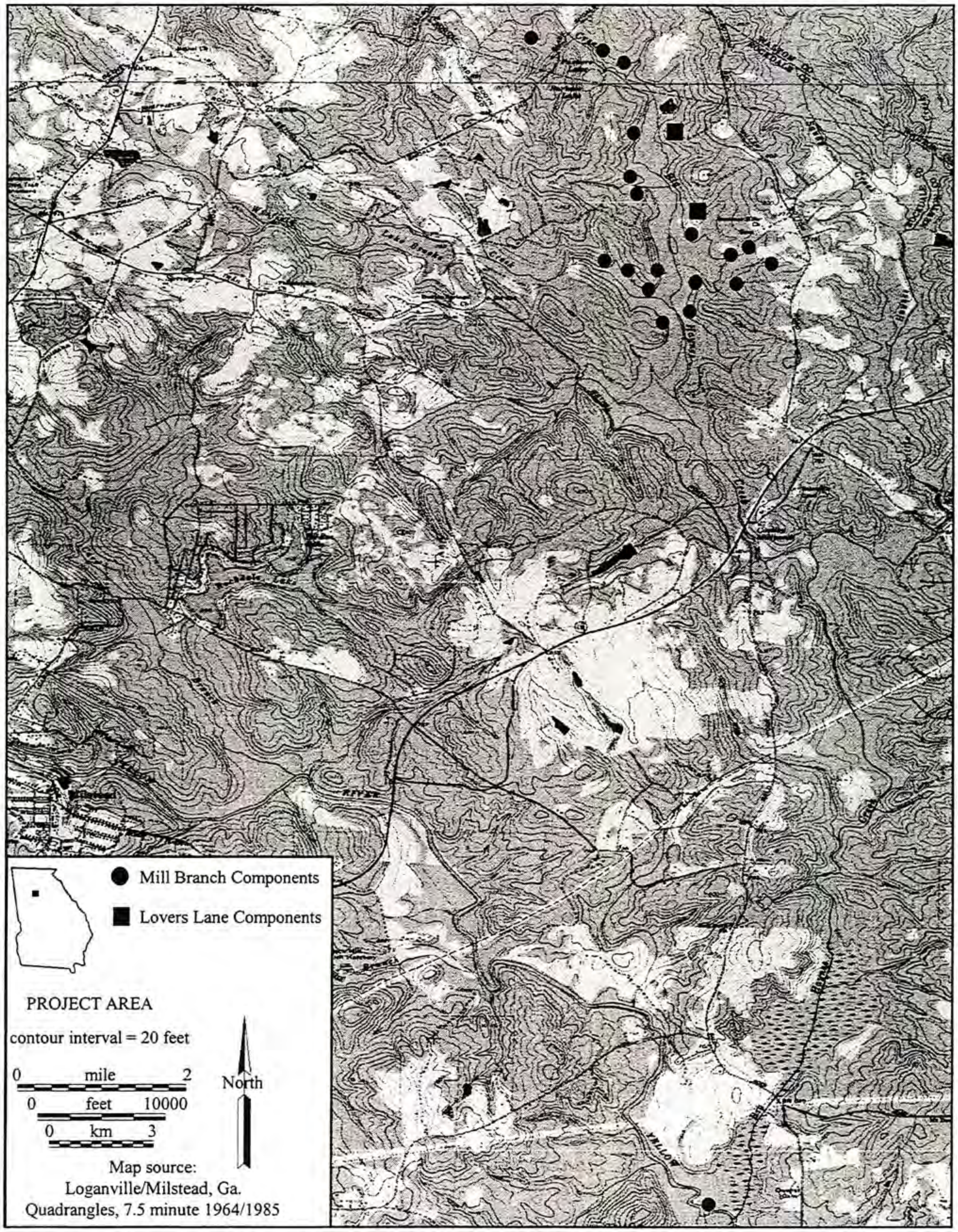

Figure 8. Late Archaic Sites Investigated during the Big Haynes Reservoir and Georgia International Horsepark Projects.

Table 3. Summary of Late Archaic Components at Phase III Sites in the Big Haynes Reservoir and Georgia International Horsepark Project Areas.

Site	Phase	Probable Site Function
9RO7	Black Shoals	Single-household seasonal occupation
9RO13	Black Shoals	Single-household seasonal occupation
9RO18	Undifferentiated Post-Stallings	Long-term (multiseasonal?) occupation
9RO20	Black Shoals	Intensive lithic reduction locality
9RO24	Black Shoals	Intensive lithic reduction locality
9RO111	Black Shoals	Short-term hunting encampment
Chase Site (9RO53)	Black Shoals	Single-household seasonal occupation

The data acquired during those projects, as well as information collected from the Wallace Reservoir region of the Oconee River drainage, will serve as a baseline for examining the nature and extent of the Black Shoals phase in north Georgia.

As mentioned in a previous section, the Mill Branch phase is an archaeological construct initially devised to describe a specific form of technological organization associated with people living in the central Savannah River region between ca. 4200 and 3850 B.P. (Elliott et al. 1994). Although the Mill Branch phase concept was developed simply as a heuristic device to stimulate further research (Elliott et al. 1994:370), the technological aspect holds up well under the scrutiny of subsequent research. This is true not only with regard to the central Savannah River region, but also in many areas of the central Georgia and western Carolina Piedmont where it falls under the Black Shoals rubric (e.g., Markham et al. 1996; O'Steen 1994; Stanyard 1997; Stanyard and Stoops 1995).

As is also discussed previously, details of chronology that have come to light since Elliott developed the Mill Branch concept suggest that this form of technological organization lasted until about 3450 B.P. outside of the Savannah River region. Mill Branch populations apparently spread into uplands on a relatively permanent basis between approximately 3850 and 3450 B.P., while the number of people utilizing Mill Branch technology in the central Savannah River region appears to have significantly declined in those years, as Stallings culture became established.

Chronology. Uncorrected conventional radiocarbon ages range from 4370–3659 B.P. for samples submitted from Mill Branch contexts, while Black Shoals radiocarbon assays date to between 3840 and 3410 B.P. (Figure 9; Table 4). Several radiocarbon dates have been acquired from Mill Branch phase contexts, and the only uncorrected conventional age obtained so far that post-dates 3850 B.P. originated from the north block of 9WR4 (Ledbetter 1995). That site also harbored a Stallings phase component, however, and the later date may be associated with that subsequent occupation.

Unfortunately, only two Black Shoals phase dates have been obtained in Georgia, and dates from secure Black Shoals contexts in the middle Oconee are currently lacking. Conventional radiocarbon ages for samples obtained from Black Shoals phase contexts within the Black Shoals Reservoir flood pool include an assay of 3540±60 B.P. from 9RO7 and an assay of 3410±80 B.P. from 9RO20. A radiocarbon date on soot extracted from a soapstone vessel fragment in Dawson County, Georgia produced a conventional radiocarbon age of 3610 B.P. (Sassaman 1997). The sherd was recovered from a rockshelter site (9DW77) that also produced metavolcanic hafted

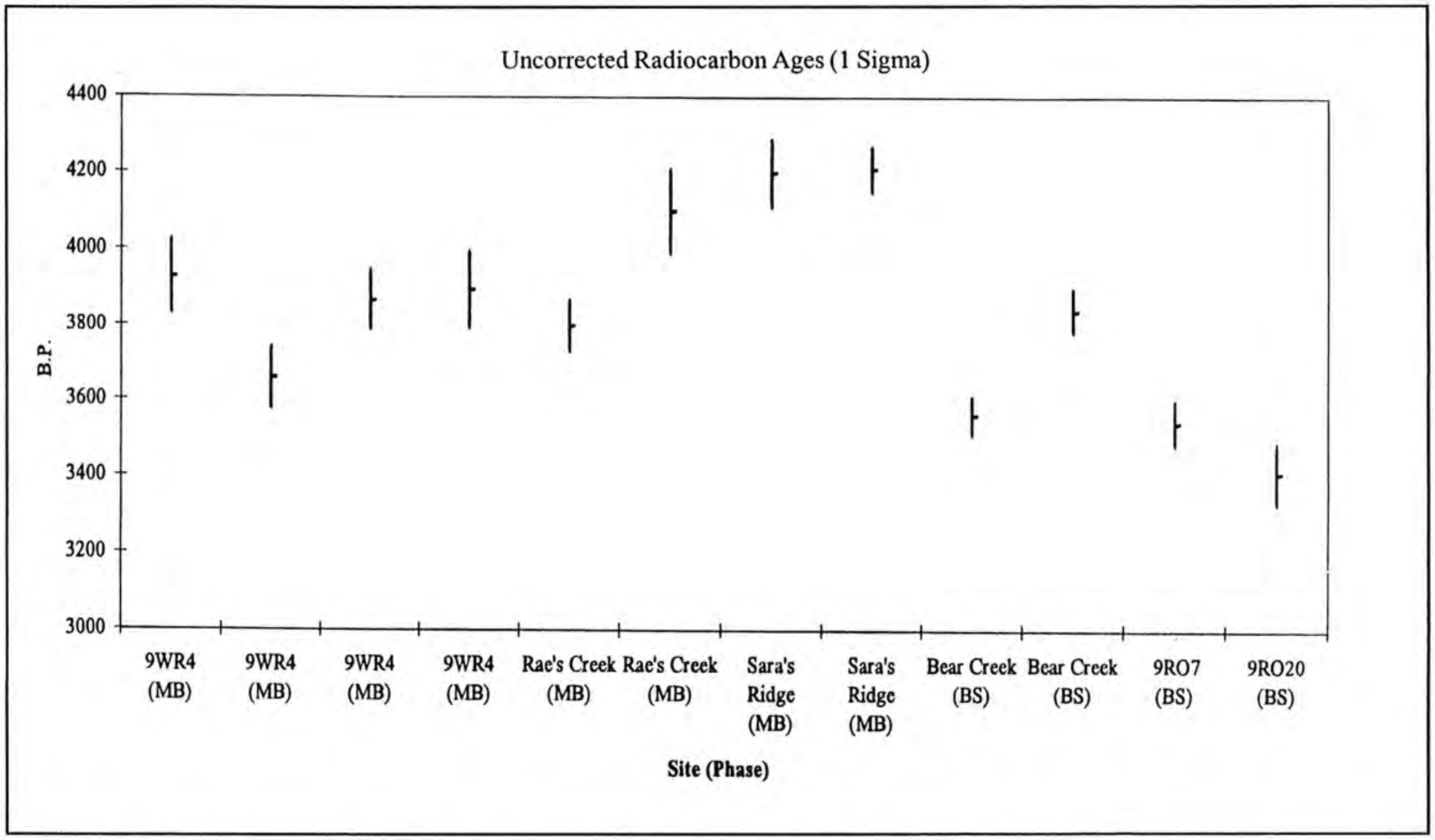

Figure 9. Selected Radiocarbon Ages from Suspected Mill Branch and Black Shoals Contexts.

Table 4. Radiocarbon Ages and Dates from Mill Branch and Black Shoals Contexts.

Site (Phase)	Institutional I.D.#	Uncorrected Radiocarbon Age B.P.	Calibrated Intercept Date	Tree Ring Calendric Age Ranges	Calibrated Age Results (1 & 2 Sigma)	MASCA Corrected Date	Probability	δ13 C Delta */00	δ13 C Delta Years
9WR4[1] (MB)	UGA-6322	3928±97	1978 B.C.	2578–2528 B.C.	n/a	n/a	5%	-26.11	-18
				2516–2288 B.C.			43%		
9WR4[1] (MB)	UGA-6164	3659±83	1709 B.C.	2188–2166 B.C.	n/a	n/a	5%	-25.82	-13
				2142–1930 B.C.			76%		
9WR4[1] (MB)	UGA-6165	3867±79	1917 B.C.	2490–2280 B.C.	n/a	n/a	50%	-26.33	-21
				2260–2200 B.C.			13%		
				2160–2150 B.C.			3%		
9WR4[1] (MB)	UGA-6166	3895±102	1945 B.C.	2570–2540 B.C.	n/a	n/a	5%	-26.41	-23
				2500–2280 B.C.			55%		
				2250–2210 B.C.			11%		
Bear Creek[2] (BS)	UGA-6787	3560±50	1610 B.C.	n/a	n/a	n/a	n/a	-24.8	n/a
Bear Creek[2] (BS)	UGA-8186	3840±59	1890 B.C.	n/a	n/a	n/a	n/a	-27.5	n/a
Rae's Creek[3] (MB)	Beta-35190	3800±70	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Rae's Creek[3] (MB)	Beta-35191	4100±110	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Rae's Creek[3] (MB)	Beta-35189	4370±110	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Sara's Ridge[4] (MB)	Beta-2736	4200±90	n/a	n/a	n/a	2940±90 B.C.	n/a	n/a	n/a
Sara's Ridge[4] (MB)	Beta-2737	4210±60	n/a	n/a	n/a	2980±60 B.C.	n/a	n/a	n/a
9RO7[5] (BS)	Beta-79144	3540±60	1885 B.C.	n/a	1935–1760 B.C.	n/a	68%	-25.0	n/a
					2015–1705 B.C.	n/a	95%	n/a	n/a
9RO20[5] (BS)	Beta-93458	3410±80	1690 B.C.	n/a	1765-1615 B.C.				
					1900-1510 B.C.	n/a	n/a	-26.3	n/a

[1] Ledbetter1995; [2] O'Steen 1994b; [3] Crook 1990; [4] Wood et al. 1986; [5] Stanyard 1997

bifaces (Webb 1998). The overall assemblage, however, does not exhibit typical Mill Branch/Black Shoals traits. Site 9DW77 is situated in the Etowah River drainage in north-central Georgia approximately 50 km northwest of the middle Oconee Black Shoals site clusters and 60 km north of the Upper Ocmulgee sites, and it was likely outside the sphere of Black Shoals influence (Figure 10).

Finally, O'Steen (1994b) reports two dates of 3840±59 and 3560±50 B.P. for a probable Black Shoals component at Bear Creek, which lies between the Congaree and Wateree rivers in Fairfield County, South Carolina (see Table 4)

Although the number of radiocarbon dates is increasing, efforts to tighten chronological control are proving difficult. This is due somewhat to large sigma ranges in radiocarbon assays and inconsistencies in analyzing and reporting radiocarbon dates. Adjustments for atmospheric carbon and fluctuations in cosmic and nuclear testing radiation are not available in many cases. When adjustments are reported, various calibration and correction techniques were employed to make them (see Table 4).

The biggest problem, however, is identifying the dates that are attributable to Mill Branch and Black Shoals occupations. These constructs have only recently been recognized as viable archaeological phenomena. In addition, the influence of Stallings culture, which is distinctive from Mill Branch in many aspects of technological and economic organization, was growing in the region at about the time Mill Branch was reaching its greatest geographical extent in the central Savannah River region.

In fact, new research suggests that Mill Branch and Stallings Island groups may have been aligned into distinct political entities that eventually became at odds with each other. Since these are fairly new concepts, concerted efforts have rarely been made to isolate phase/culture-specific assemblages within a larger Late Archaic component at a given site or in a specific region.

Material Culture. Throughout the Eastern Woodlands, the primary diagnostic element of Late Archaic technology is the broad-bladed hafted biface. Mill Branch and Black Shoals components are no exception. However, they are distinguished by the utilization of metavolcanics as a prominent source of raw material to an extent greater than that of any previous or subsequent era in the Southeast (Table 5).

Table 5. Savannah River Hafted Biface Raw Material Comparisons for Selected Mill Branch and Black Shoals Phase Sites.

Site	n	% Metavolcanics	% Quartz	% Quartzite	% Chert
Mill Branch[1]	228	89.9	6.1	0.4	3.6
Bear Creek [2]	27	33.3	62.9	3.8	0
Lovers Lane[3]	32	68.8	9.4	0	21.8
Chase Site[4]	33	78.1	21.9	0	0
9RO7[5]	20	85.0	5.0	0	10.0
9RO13[5]	20	80.0	15.0	0	5.0

Data derived from: [1]Ledbetter 1995; [2]O'Steen 1994; [3]Elliott et al. 1994, data available for whole specimens only;
[4] Stanyard and Stoops 1995; [5]Stanyard and Pietak 1997. *Mill Branch components in italics*

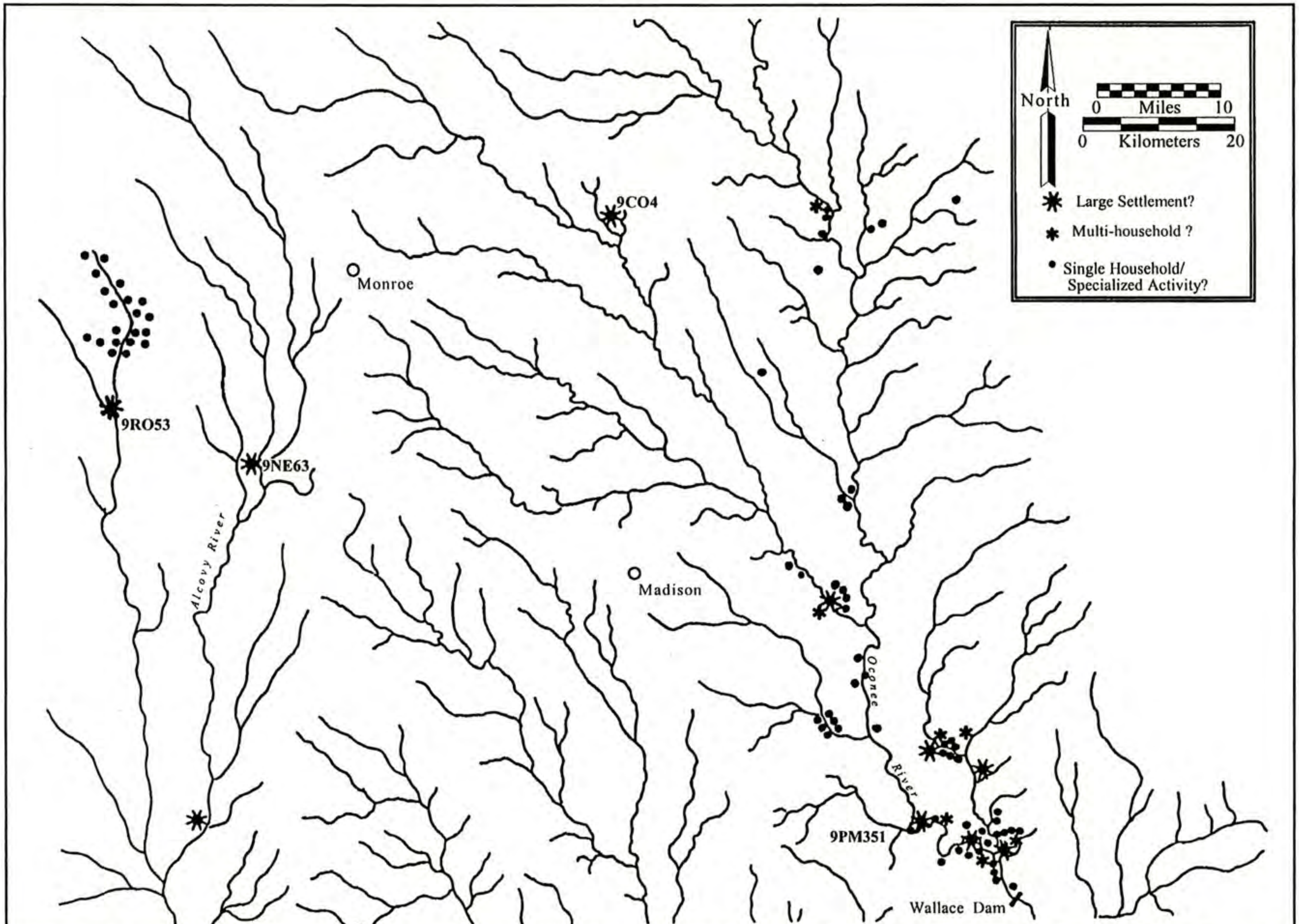

Figure 10. Black Shoals Phase Sites in the Upper Ocmulgee and Central Oconee River Drainages.
(Adapted from Ledbetter 1995)

Metavolcanic rock is available throughout the geographical region settled by groups utilizing this technology, and they used it primarily to manufacture hafted bifaces, bifaces, and bifacial axe/adzes (Figure 11). Ground stone axe/adzes, ovoid ("Southern Ovates") and winged ("Bannerstones") atlatl weights, perforated soapstone slabs, soapstone bowls, and fiber-tempered pottery are associated with these metavolcanic chipped stone assemblages (Elliott et al. 1994; Ledbetter 1995; O'Steen 1994; Stanyard 1997; Stanyard and Stoops 1995; Tippitt and Marquardt 1984; Wood et al. 1986).

Although the Mill Branch and Black Shoals phases are very similar and distinctive technological phenomena, the relative frequencies of the above-mentioned artifact classes in specific assemblages, especially for soapstone, tend to vary geographically. Soapstone bowl sherds are commonly found in contexts outside the Savannah River region, while soapstone slabs are rare. Soapstone slabs are very common in the Savannah catchment, and soapstone bowl sherds are almost completely absent, despite the proximity to raw material sources. Thus an important technological difference between the Mill Branch and Black Shoals phases is the way in which soapstone was utilized.

It is interesting that all of the dates Sassaman (1997) has obtained from soot attached to soapstone vessel fragments post-date the introduction of ceramic technology by many centuries (Table 6)[5]. It may also be important that the dates begin at about the same time the Mill Branch phase is replaced by Stallings culture in the Savannah River region. In addition, three of the four earliest dates occur on vessel fragments recovered from Georgia; one was obtained from Black Shoals contexts at 9RO20 (Table 6).

Table 6. Radiocarbon Dates for Soot Extracted from Soapstone Bowl Sherds in Georgia and South Carolina.

Site	Lab Number	Conventional C14 Age B.P. (1 sigma)	Calibrated Intercept Date (B.C.)
9DW77	Beta-92523	3610±60	1945
9RO20	Beta-93458	3410±80	1690
9TF5	Beta-84699	3460±60	1750
38BR813	Beta-92522	3460±60	1750
38AK-Hitchcock 26	Beta-84698	3320±60	1605
38AK224	Beta-95681	3300±50	1535
38BK984	Beta-81405	3180±60	1430
38CH1609	Beta-89079	3160±40	1420
38AK224	Beta-79986	3160±60	1420

Data derived from Sassaman 1997

Sassaman (1997:15-16) has proposed that populations outside the Stallings sphere of influence created a soapstone bowl "industry" that was used to establish relations with new regional neighbors. They combined their knowledge of soapstone with the ethnic and gender related

[5] Sassaman (1997) used several criteria to ensure that the dated soot accumulated on the soapstone vessel during use. Sherds that appeared to be exposed to flames as recycled material or in postdepositional contexts were not dated. As Sassaman (1997:3-4) points out, soapstone vessels probably had a long use-life, and the dates likely reflect an average age or relate to the latter years of use.

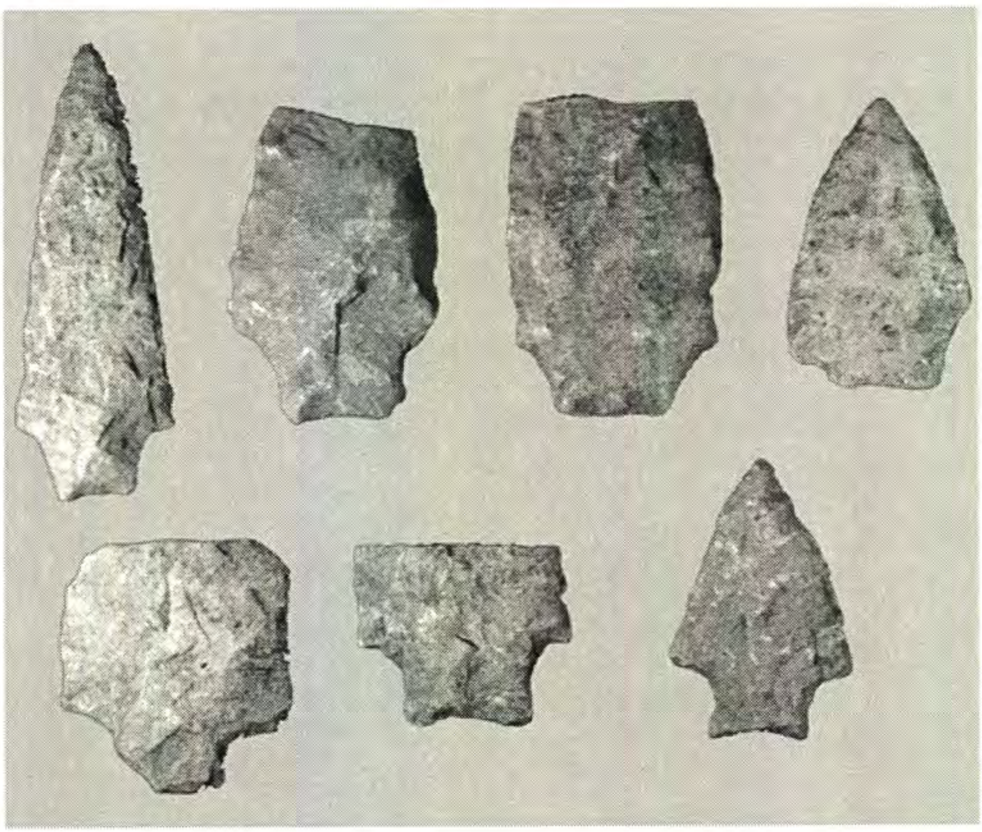

Figure 11. Typical Metavolcanic Savannah River Hafted Bifaces Associated with the Mill Branch and Black Shoals Phases.

tradition of ceramic production and use to create a new cultural identity that is manifested archaeologically as the Black Shoals phase. The production and manipulation of soapstone bowls proved to be very successful, as region-wide exchange networks were established that resulted in the exportation of soapstone bowls to many areas of the Southeast, including Poverty Point.

As discussed above, medium to large, broad-bladed hafted bifaces manufactured from locally available metavolcanic rock are the primary diagnostic artifacts associated with Mill Branch/Black Shoals phase occupations (see Figure 11). It is not uncommon for these specimens to exceed 12-cm length and 5 cm width (Table 7). Two basic types of metavolcanic hafted bifaces are evident; they are provisionally designated Type A and Type B. Type A specimens are slightly longer and considerably wider and thinner than Type B hafted bifaces, which are much more robust (Figure 12 and 13). Type A forms appear to have been cutting and/or prying tools, but Type B probably functioned primarily as projectile points and/or knives.

Table 7. Descriptive Statistics for Metric Attributes of Metavolcanic Savannah River Hafted Bifaces from Selected Sites in Georgia and North Carolina.

Site	n	Length		Width		Thickness	
		Range	Mean	Range	Mean	Range	Mean
9RO7	*4–10	6.8–8.9 (4)	8.1	3.2–4.6 (10)	3.9	0.9–1.3 (10)	1.1
9RO13	*0–6	n/a	n/a	3.4–6.7(6)	4.9	0.8–1.6(6)	1.3
9WR4	16	6.6–14.0	9.2	3.5–7.7	4.7	0.6–2.0	1.1
9RI86	9	5.0–12.0	7.3	3.3–5.8	4.1	0.9–1.1	1.0
9PM351	**16	7.0–10.1	8.5	3.8–7.5	4.6	1.0–1.4	1.2
9OC4	69	5.0–10.4	7.6	2.7–5.4	3.8	0.8–1.8	1.1
9NE63	30	7.0–10.0	8.4	3.0–5.5	4.1	0.8–2.0	1.2
Doerschuk	70	7.0–17.0	10.0	3.5–7.0	5.0	n/a	n/a

* Counts for individual metric attributes in parentheses

** Maximum count of measured attributes

(Data Derived from Ledbetter 1995: Table 6-5; Stanyard 1997; Stanyard and Stoops 1995).

In the metavolcanic Savannah River point inventory from the Big Haynes Reservoir and Georgia International Horsepark projects, transverse fractures occurred on 64.7 percent of the 9RO7 examples, and 87.5 percent of the 9RO13 specimens; 76.9 percent of the diabase Savannah Rivers from the Chase site (9RO53) exhibit this type of breakage as well. These percentages compare favorably with Lovers Lane (89.9 percent), Mill Branch sites 9WR4 and 9WR11 (63.1 percent), and Bear Creek (76.0 percent).

Breakage patterns are evidence that the two types of Savannah River hafted bifaces noted above served in these capacities. As Elliott et al. (1994:243), Ledbetter (1995:64), Stanyard (1997) and Stanyard and Stoops (1995) have pointed out, breakage patterns on Type A metavolcanic Savannah River hafted bifaces suggest that they were used primarily as knives or prying tools. Regardless of raw material, broken Type B specimens frequently exhibit snap or step fractures, which are associated with direct impact. This indicates they functioned as projectiles and/or perforators.

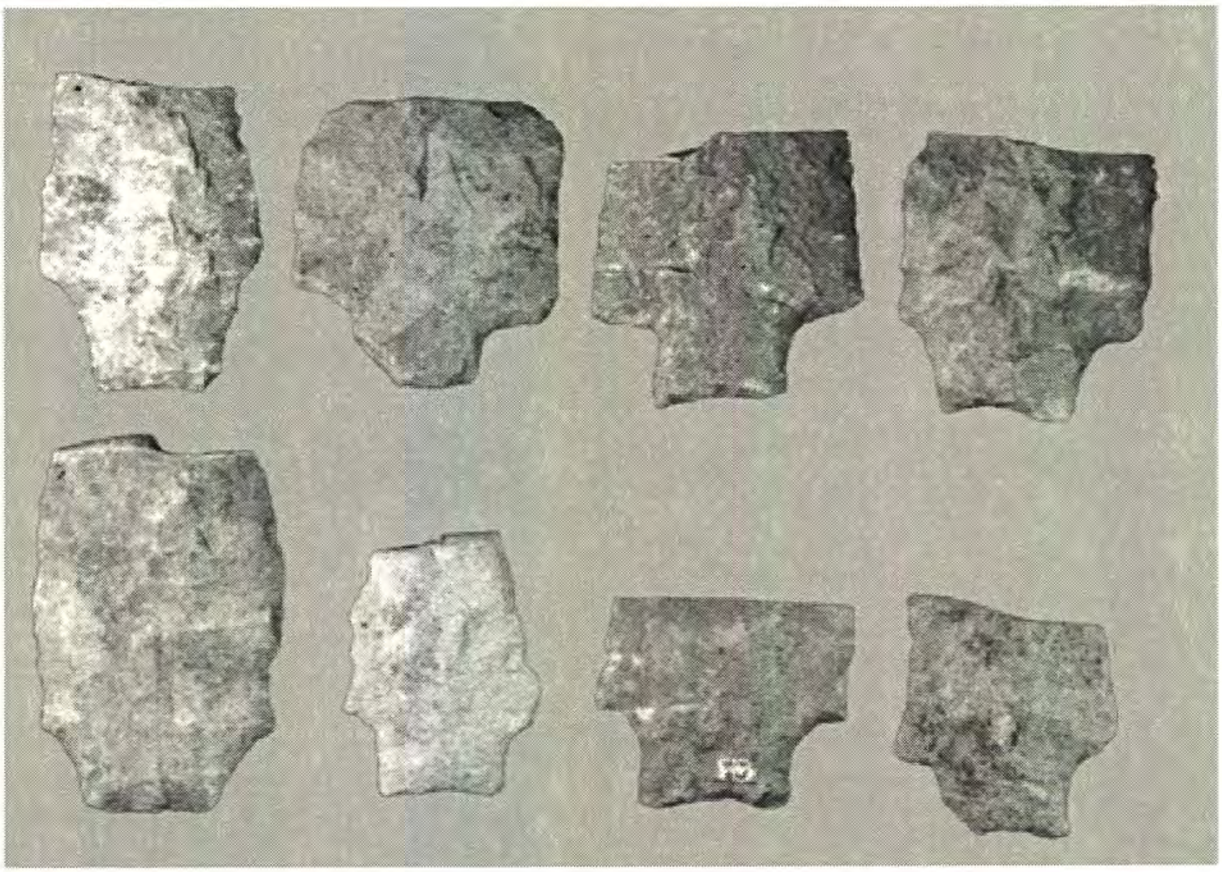

Figure 12. Type A Savannah River Hafted Bifaces.

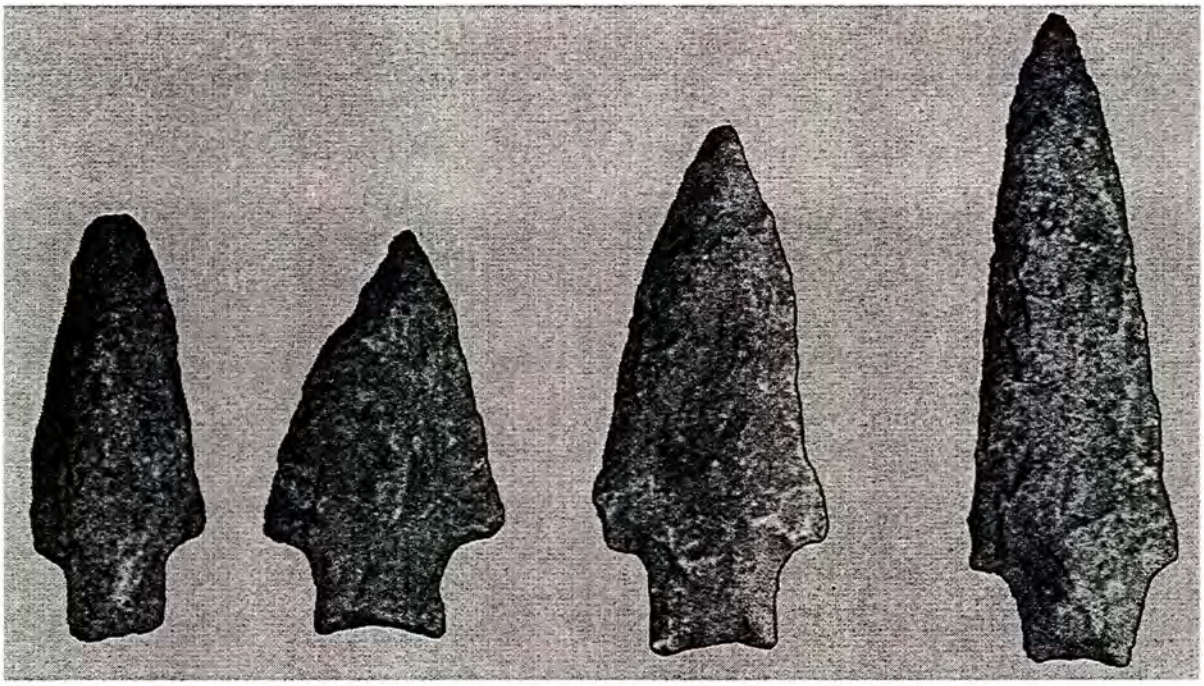

Figure 13. Type B Savannah River Hafted Bifaces.

The type of transverse fractures on examples depicted in Figure 12 is consistent with breaks associated with the final stages of knapping, as well as cutting and prying (Johnson 1979). However, it is evident that these fractures are often snaps that remove most or all of a distal end at one time (Figure 14); almost all of the broken specimens, distal and proximal, are completed specimens. This implies that they were broken while being used rather than during manufacture.

Cruciform drills are the most common type of formal perforator encountered in Mill Branch and Black Shoals contexts. Most are manufactured from metavolcanic rock, but chert examples are not uncommon (Figure 15). Elliott et al. (1994:244) suggest that their morphology indicates they are probably recycled broad-stemmed hafted bifaces. Some cruciform drills no doubt originated from broken broad-blades, especially those manufactured from high-quality chert. However, the haft element configuration of the projectile points also permits a high degree of torque while maintaining tool integrity. Therefore, it is suggested that many cruciform drills were manufactured directly from preforms utilizing the same haft element style as that used on broad-blades. After examining 41 drill specimens from 9WR4, one of the Mill Branch type sites, Ledbetter (1995:132) has come to the same conclusion.

These items were probably primarily used to penetrate organic media, but archaeological examples of organic artifacts are rare in the region because of poor preservation. There is abundant evidence, however, that drills were also used on soapstone (Dickens and Carnes 1983; Elliott et al. 1994; Sassaman 1993a). Holes were drilled in soapstone and ceramics to create mend holes for repairing broken vessels. Stone drills were also used to perforate soapstone cooking slabs and may have been employed to drill holes in ground stone as well. However, Elliott et al. (1994) and Ledbetter (1995) have produced evidence that indicates hollow cane drilling was often used to drill ground stone tools, particularly atlatl weights and bannerstones. They have shown that the residue from this activity, in the form of drill cores, is present at several sites in the central Savannah River region (Elliott et al. 1994:245). Such evidence is lacking in the Oconee or Upper Ocmulgee drainages.

Bannerstones and atlatl weights are found in many Mill Branch/Black Shoals phase assemblages (Claflin 1931; Ledbetter 1995; Elliott et al. 1994; Sassaman 1993; Stanyard 1997; Stanyard and Stoops 1995; Stoltman 1974). Most atlatl weights are soapstone. The most common bannerstone raw materials are soapstone, slate, and tuff; they are frequently polished.

Two major bannerstone categories have been described (Kwas 1981:167). The first is a "simple" ovoid form; the second is a "winged" type that has been described as an "elaborate" ovoid (Kwas 1981:167) (Figure 16).

It has traditionally been thought that bannerstones, especially the "simple" forms, were used as atlatl weights (e.g., Webb 1957). Mounting evidence suggests the some of the winged types were ceremonial and/or prestige goods (Clark and Parry 1990; Hassan and Farnsworth 1987; Kwas 1981). However, the winged specimens may have been used with pump drills, as they make suitable counterweights and flywheels (Ledbetter 1995:151). The suggestion that at least some of these specimens functioned in this capacity is supported by the fact that, in the Savannah River region, winged bannerstones are often found in domestic contexts associated with an abundance of cruciform drills and drill bits.

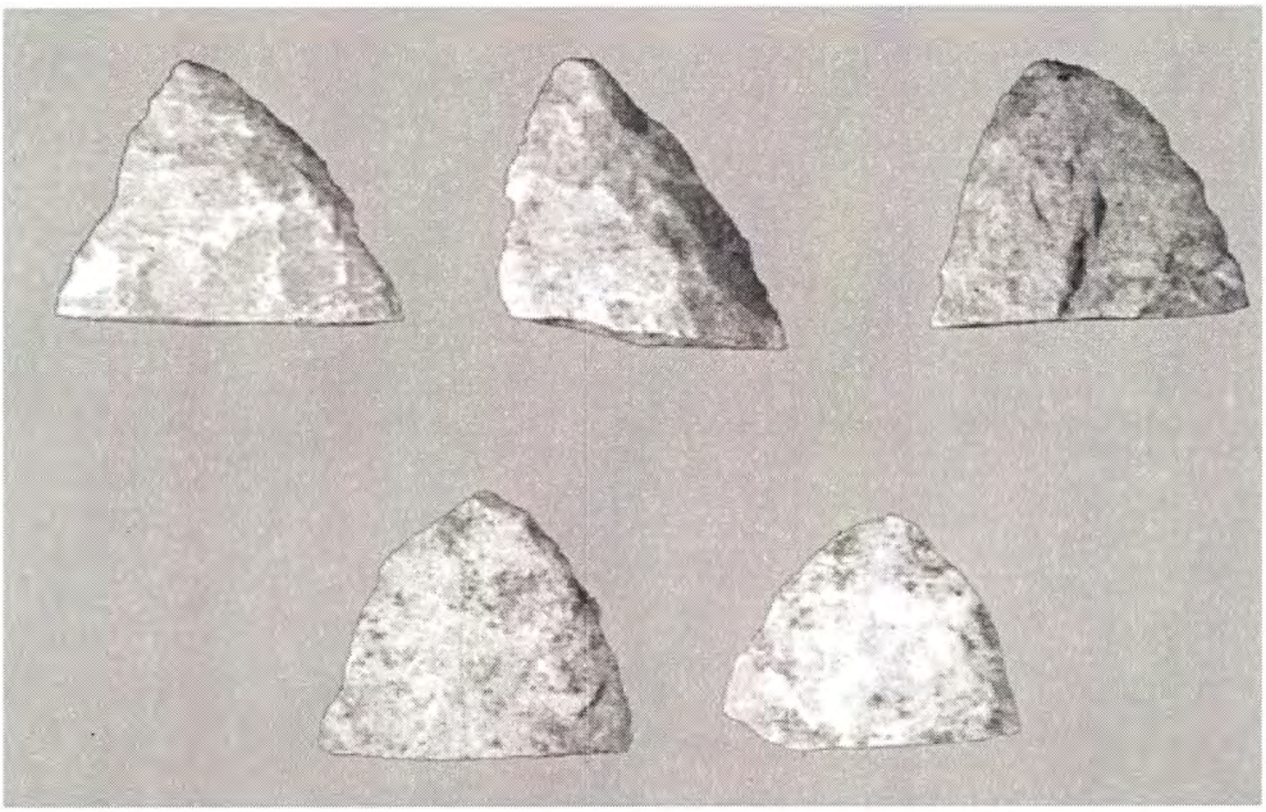

Figure 14. Distal Segments of Type A Savannah River Hafted Bifaces.

Figure 15. Cruciform Drills (Proximal Section) Associated with the Mill Branch and Black Shoals Phases.

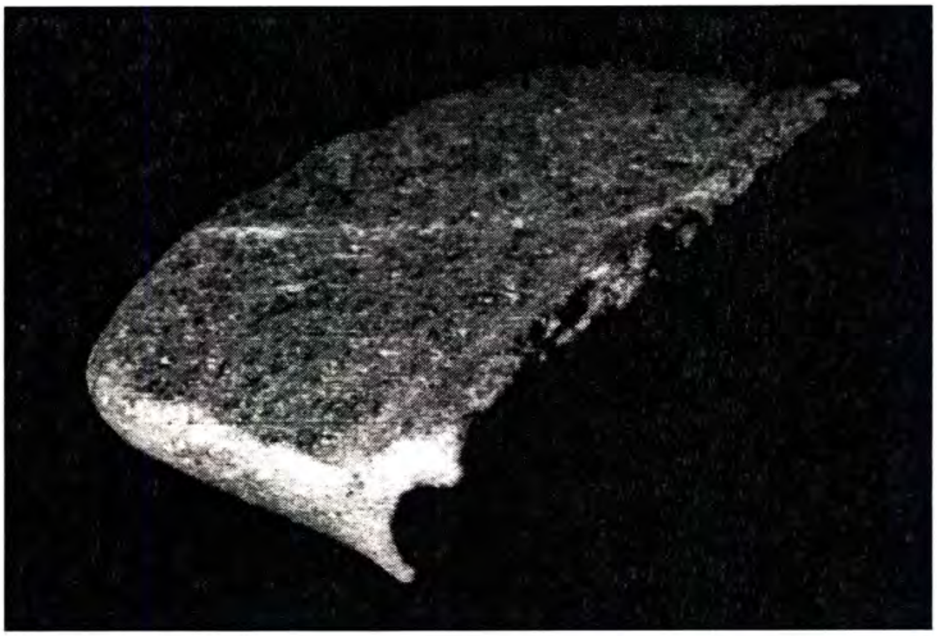

Figure 16. Winged Bannerstone Fragment Recovered from Black Shoals Contexts.

As discussed previously, soapstone was an important raw material to people associated with the Mill Branch and Black Shoals phases. It was primarily used for perforated cooking slabs, bowls, atlatl weights, and bannerstones. Perforated slabs are very common additions to Mill Branch phase assemblages in the Savannah River region. They are thought to have been used for indirect cooking (Sassaman 1993a); hundreds have been recovered from Stallings Island and Lake Spring, and many sites contain at least a hundred specimens. By contrast, perforated soapstone slabs are uncommon at Black Shoals phase sites in the central Oconee and Upper Ocmulgee catchments.

No perforated soapstone slabs were recovered during the Big Haynes Reservoir projects, and only two examples have been recovered in Rockdale County. Both were found in Black Shoals contexts at the Chase site (9RO53).

In contrast to perforated soapstone slabs, soapstone bowls are uncommon in the Savannah River region before approximately 3500 B.P. (Elliott 1981; Elliott and Doyon 1981). They are exceedingly rare at large floodplain settlements, none are reported from Lake Spring, and only one sherd is known to have come from Stallings Island (Elliott et al. 1994; Miller 1949). Soapstone bowl fragments have been recovered at McCalla Bottom (Schuldenrein et al. 1985), Gregg Shoals (Tippitt and Marquardt 1984), and a few other upland sites along the Savannah River in the piedmont, but they are not nearly as common in that region as they are in the Oconee and Upper Ocmulgee. This is despite several nearby sources of soapstone that were exploited for raw material for atlatls, bannerstones, gorgets, and perforated slabs.

Soapstone bowls occur very frequently in the Upper Ocmulgee region, but as stated previously, perforated cooking slabs are rare (Figure 17). Soapstone bowl sherds were present in all Late Archaic assemblages examined during data recovery in the Big Haynes Reservoir and Georgia International Horsepark project areas; at least one site (9RO20) contained multiple vessels. Many sherds exhibit exterior sooting, indicating that soapstone bowls were used for direct fire cooking.

Ceramics also occur in Mill Branch phase contexts; the sequence roughly corresponds to Phase I of Sassaman's ceramic chronology for the Savannah River region (Sassaman 1993a). These are fiber-tempered wares that exhibit several types of surface treatments: plain, simple stamped, incised, linear punctate, and drag and jab.

According to Sassaman (1993a:109), plain vessels dominated the assemblages until approximately 3800 B.P., which is coterminous with the end of the Mill Branch phase. Ceramic vessel reconstructions indicate that flat-bottomed basins and round-bottomed bowls were produced. Rims are sometimes thickened and/or flanged. They are usually straight or incurvate; excurvate rims occur but are uncommon (Sassaman 1993: Figure 22, Table 13).

Sassaman's mechanical performance studies indicate that these two early vessel types were likely used for indirect cooking; the flat-bottomed basins were particularly suited for this activity. Both vessel forms facilitated indirect cooking by providing suitable space for adding and removing cooking stones and/or slabs, as well as easy access to the food contents (Sassaman 1993:144–180).

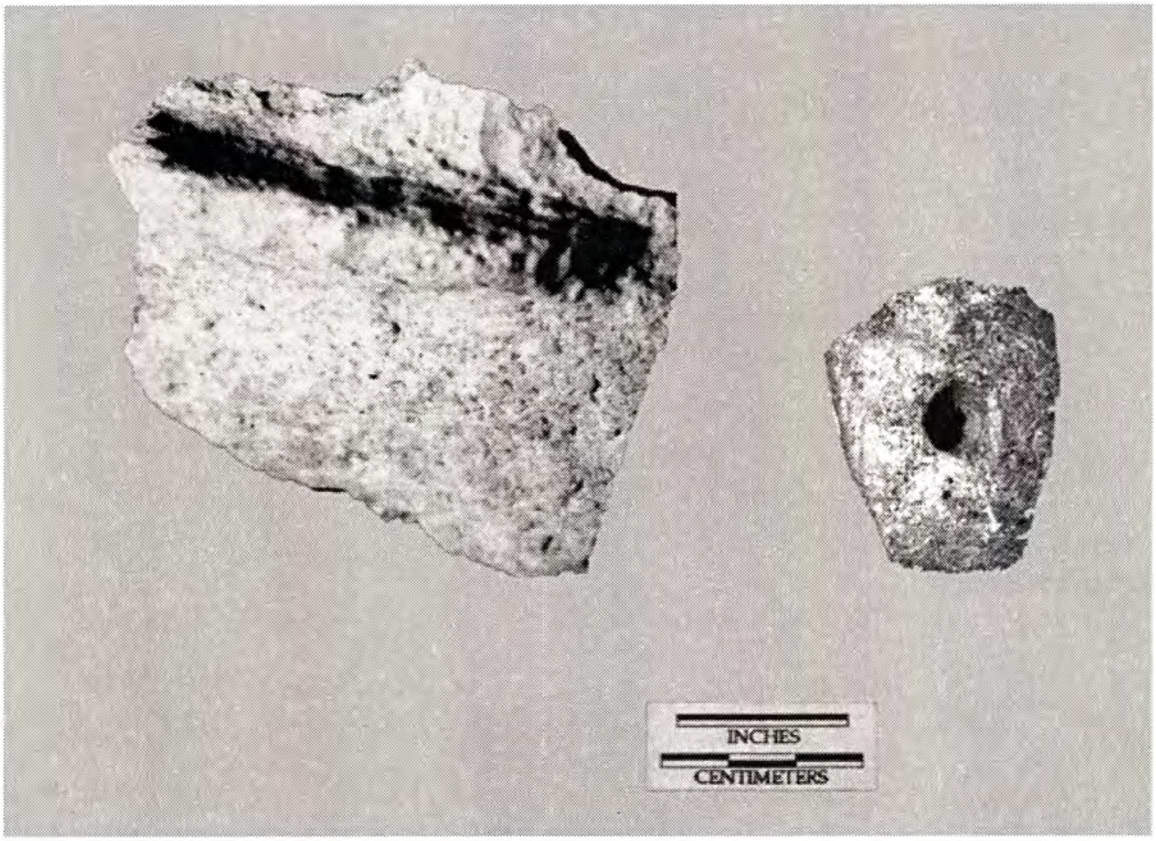

Figure 17. Soapstone Bowl Fragment and Soapstone Perforated Cooking Slab Recovered from Black Shoals Contexts.

In a few Mill Branch phase components in the Savannah River region—McCalla Bottom, 9WR4, and 9WR11, for example—Late Archaic ceramics are plentiful (n= 100+). A variety of surface treatments are present in these assemblages. In the Oconee and Upper Ocmulgee drainages, however, relatively few Black Shoals phase sites contain fiber-tempered ceramics. Further, sample sizes are usually very small when pottery is present (Stanyard and Stoops 1995; Wood et al. 1986:332). Collections rarely exceed a dozen sherds in these circumstances.

Black Shoals sites in the Upper Ocmulgee region that contain fiber-tempered pottery include the Chase Site (9RO53), 9RO18, 9RO20, and Big Haynes Rockshelter (9RO111). All three sherds from Black Shoals contexts at the Chase site exhibit a Stallings Island Punctate surface design (Figure 18). The single Stallings Island punctate sherd from 9RO18 is attributable to a later, undifferentiated phase occupation. Five fiber-tempered sherds, four exhibiting a drag and jab surface design and one with a plain surface treatment, were discovered in Black Shoals contexts at 9RO20. Two fiber-tempered vessels are represented in the Big Haynes Rockshelter assemblage. Ten plain sherds are the remains of a plain container with a straight rim and squared lip. One Stallings Island punctate sherd represents the second vessel. Although stratigraphic evidence is lacking from Big Haynes Rockshelter, diabase Savannah River points were present.

Site Characteristics. Three categories of Mill Branch and Black Shoals sites are recognized based on functional differences. Five site types exist within those categories.

Aggregation Sites. These are prominent locations along the Savannah River where many groups congregated at specific times of the year to participate in communal subsistence endeavors and non–subsistence-related production, fulfill social obligations, create and renew alliances, and to perform rituals associated with any or all of these activities. Faunal evidence suggests that they aggregated in the spring, when anadromous fish were available and shellfish could be harvested in large quantities.

Stallings Island and Lake Spring are the only sites in this category that contain Mill Branch components. Stallings Island occurs just north of the Fall Line in the middle Savannah River valley, and Lake Spring occurs in the southern piedmont along the same drainage. There are no known Black Shoals aggregation sites anywhere within the geographical purview of that phase.

Stallings Island has been exposed to extensive archaeological investigations since it was first excavated by C. C. Jones Jr. in the middle of the nineteenth century (Bullen and Greene 1970; Claflin 1931; Crusoe and DePratter 1976; Fairbanks 1942; Jones 1873). Unfortunately, however, a clear and comprehensive understanding of the site has not been obtained. Notes and reports of investigations either lack key data, contain ambiguous information, or concentrate on limited data sets.

Despite these obstacles, researchers have been able to extract enough information to reasonably assert that Stallings Island was a location where Late Archaic peoples congregated and performed the types of communal activities alluded to previously (Elliott et al. 1994; Sassaman 1993a; Sassaman and Anderson 1994). Very intensive, large-scale shellfish collecting is

Figure 18. Stallings Island Punctate Sherds from Black Shoals Contexts at the Chase Site.

indicated by the massive shell midden in the center of the island. It measures approximately 500 x 300 feet, covering an approximate area of 13,935 m^2 (3.1 acres), and is more than 4 feet (1.3 m) thick in places (Claflin 1931). Although accounts of investigations up to and including Claflin's report, of course, made no mention of a Late Archaic affiliation (this term was not in use at the time), subsequent research indicates that the midden is attributable to Late Archaic groups, including people associated with the Mill Branch phase.

In addition to shellfish, there is evidence that Stallings Island groups harvested sturgeon (Sassaman et al. 1990:314); other anadromous fish such as shad were very likely exploited also. Large-scale anadromous fish acquisition was almost invariably an activity conducted by fairly large groups of socially integrated people. It requires a great deal of cooperative effort, it is time-consuming, and, since equipment such as nets, weirs, and drying racks have to be manufactured and maintained, it involves delayed return on investments. Ethnohistorically, this type of activity was often conducted in social contexts that involved much more than food acquisition. It was integrally involved in sociopolitical affairs that directly related to the acquisition and display of political power. Consequently, this activity was integral to the structure of social relations (e.g., Kan 1989; Watanabe 1972).

Additional evidence that a large Late Archaic population occupied Stallings Island includes more than 80 burials, 20 hearths, and 100 pit features attributable to that period. A large number of metavolcanic hafted bifaces and perforated soapstone slabs, hallmarks of the Mill Branch phase, were found in contexts that suggest at least a portion of the shellfish remains—and many of the burial, hearth, and pit features—are attributable to people utilizing this technology.

As Elliott points out (Elliott et al. 1994:53), while Claflin (1931) stated that no evidence of structures existed at Stallings Island, post mold configurations and patterns similar to those interpreted as being attributable to Late Archaic structures elsewhere in the region are discernible in plan views provided in Claflin's site report. Multiple habitation and other types of structures are probably represented on this map; many more doubtless escaped identification given the complex stratigraphy that is notorious at shell mound sites of this size.

Based on evidence for anadromous fish acquisition (i.e., sturgeon and possibly shad), Stallings Island appears to have been occupied in the spring. Shellfish could have been acquired at this time as well; in the Southeast, they were harvested from spring through fall (Claassen 1986). There is no evidence of a winter occupation; this is consistent with research indicating that freshwater shellfish were not exploited in the region in winter (Claassen 1986:29–30).

A final note on the Mill Branch occupation at Stallings Island is related to ceramics. Although an aceramic horizon has been identified that dates to approximately the middle of the fourth millennium B.C. (Williams 1968), ceramics were probably produced and used by Mill Branch groups occupying this location.

The onset of ceramic utilization at Stallings Island has been offered as 3730±150 B.P. based on a single radiocarbon date from a sample within the general midden at the bottom of the first ceramic-bearing cultural horizon (Sassaman 1993a; Williams 1968). However, and notwithstanding the problems associated with a single date derived from general contexts in complex stratigraphy, this radiocarbon date has a one-sigma range that overlaps with the postulated terminal date of the Mill Branch phase (3800 vs. 3880 B.P.). Further, subsequent radiocarbon dates from secure contexts that contain fiber-tempered pottery elsewhere in the region indicate that this technology was being utilized in the interior on a widespread geographical basis by approximately 4000 B.P. (Crook 1990; Ledbetter 1995). It seems likely that aggregate populations at Stallings Island would have utilized this form of cooking and storage technology when it was contemporaneously being used in surrounding areas.

Carl Miller (1949) was the first to report on excavations at Lake Spring. He describes a preceramic and ceramic cultural horizon attributable to Late Archaic occupations. One human burial, which Miller attributes to the preceramic component, was encountered at that time.

Joseph Caldwell excavated at Lake Spring in 1951, but only preliminary details are available. According to Caldwell's field notes (Elliott et al. 1994:56), Lake Spring was a shell midden 1,087 m^2 in area (130 x 90 feet) and approximately 1.1 m (3.5 feet) thick. Caldwell discovered 17 additional human burials, most or all of them likely associated with the Late Archaic. Several hearths, post molds, and a cache of perforated soapstone slabs are among the other types of recorded features.

Although Lake Spring has not undergone the scrutiny that Stallings Island has received, the limited available data suggest that these sites functioned in the same capacity. The accumulation of shellfish remains at both sites suggests that groups cooperated in a large-scale effort to obtain this economically and socially important resource. Multiple burials, perhaps cemeteries, were present at Lake Spring and Stallings Island. This is further evidence of a large, socially integrated population at these locations. Finally, the material culture attributable to the Mill Branch phase—large metavolcanic hafted bifaces, perforated soapstone slabs, soapstone atlatl weights, and fiber-tempered ceramics—indicates that both sites were occupied in that era.

Domestic Sites. Two types of domestic sites are apparent in the archaeological evidence. One was a relatively long-term (multiseasonal) residence for several families. Sites of this type exhibit evidence of multiple structures, usually oval or subrectangular, that are 5–9 m along the longest axis. Assuming that these are habitation structures, their size indicates that a large extended family or perhaps smaller co-residential families could have shared a dwelling. Community size was probably small, consisting of less than five residential units.

The second type appears to be a seasonal occupation where only one habitation structure was utilized. Structure sizes at these sites are similar to those at multihousehold locations. Therefore, it is suggested that these occupations were probably by one large extended family or perhaps two co-residential families that shared a dwelling.

The material cultural attributable to both multiseasonal and seasonal habitations is essentially the same. Most or all artifact classes that define the Mill Branch and Black Shoals phases exist in the assemblages associated with these occupations. As expected from sites of this kind, resource procurement and processing, food preparation, and tool maintenance and production are well represented. One major distinction is that large-scale production of specific goods, particularly perforated soapstone cooking slabs, atlatls, and bannerstones, is evident at multiple domestic household sites within Mill Branch territory (e.g., Elliott et al. 1994; Ledbetter 1995), but this behavior has not been documented in single domestic household settings associated with Black Shoals occupations.

It is suggested that perforated slabs were being produced for local and extralocal domestic use, while atlatls and bannerstones were being manufactured in anticipation of future needs in times of dispersal. It is also possible that atlatls and bannerstones were part of cruciform drill systems used in the production of perforated soapstone slabs and other objects.

Lithic raw material utilization in chipped stone technology is similar at both types of domestic sites. Locally available metavolcanic rock was primarily targeted for hafted biface production; it was also used on a limited basis to manufacture bifaces and axe/adzes. Chert from the Coastal Plain, almost exclusively derived from the extensive sources in east-central Georgia near Augusta, was utilized for hafted bifaces, bifaces, knives, scrapers, and expedient flake tools. Quartz was also an important addition. Although it was occasionally used to manufacture high-quality hafted bifaces, it was heavily relied upon for expedient needs. The evidence suggests that quartz served as a replacement for chert, both in terms of simply saving valuable raw material and as a supplement to a dwindling supply.

As mentioned previously, soapstone was an extremely important raw material to people utilizing Mill Branch and Black Shoals technology. It was used to manufacture perforated cooking slabs, soapstone bowls, atlatls, and bannerstones. Cooking-related soapstone artifacts, atlatls, and bannerstones have been found at most domestic sites.

Ceramics are often present, although usually in very limited numbers. The largest assemblages contain about 300 sherds. However, ceramic assemblages from most sites contain a dozen sherds or less.

These site types exhibit dense artifact concentrations in a very limited space around the habitation area. Most sites are confined to an area of 50 m in diameter or less. Storage and thermal pits are present, and concentrations of large numbers of quartz cobbles—unmodified and heat-altered—are very common. Both interior and exterior hearths occur.

The Mill Branch component at Lovers Lane (9RI86), located along the central Savannah River near Augusta, exemplifies the multihousehold domestic site type (Elliott et al. 1994). At least two, and possibly as many as five, structures appear to have been present at the same time. In addition to the multiple structures and a large and diverse lithic and ceramic artifact assemblage, the ethnobotanical data suggest that this site was occupied by a fairly large group of people (15–20?), and probably for an extended period. Charcoal and flotation sample analyses indicate that the setting was a mature hickory-oak-pine forest community, but that forest-edge and opportunistic species such as bedstraw, mulberry, cherry, and a variety of grasses were also present (Elliott et al. 1994:308). This suggests that labor was invested to clear the forest and/or obtain substantial amounts of raw material for construction. Long-term heavy use of the area would also have disturbed the natural forest setting.

Archaeological evidence from Lovers Lane indicates that hafted biface, atlatl, bannerstone, and perforated soapstone slab manufacturing took place at this location during the Mill Branch phase. Not only are these items present in large numbers, but residue from the manufacturing process is evident. The broken Savannah River hafted bifaces in the late stages of production and dense concentrations of metavolcanic and Coastal Plain chert debitage attest to hafted biface manufacture. Several drill cores were recovered, as were broken and partially completed atlatls and bannerstones, indicating that these objects were being produced on site as well. Cruciform drills and drill bits, which were used to perforate soapstone slabs, were common at Lovers Lane (n= 82); they were found in clusters throughout the site area (Elliott et al. 1994: Figure 8-4). Further, all but a few soapstone slabs exhibit incomplete perforations. It is suspected from this evidence that perforated slabs were being produced and recycled.

Fiber-tempered ceramics (n= 272) were present at Lovers Lane as well. All surface design types that occur in Sassaman's Phase I ceramic chronology occur in the assemblage (Sassaman 1993a). Rim thicknesses, vessel diameters, and vessel shapes (flat-bottomed open bowls) conform to those described by Sassaman as associated with middle Late Archaic populations living in the interior (Elliott et al. 1994:264–277).

An example of a single-household domestic site is 9RO7. Artifact patterns strongly suggest a single Black Shoals phase habitation structure, about 7 m in diameter, in the approximate center of the occupation area. A calibrated intercept date of 3885 B.P. (3540±60 B.P. [Beta-79144]) places the occupation in the early portion of the Black Shoals phase.

Most of the artifact categories associated with Black Shoals technology were present at 9RO7, but many occurred in fewer numbers than at Lovers Lane and other Mill Branch sites of that type. Only one bannerstone fragment and two cruciform drills were recovered. Drill cores were absent, as were perforated soapstone slabs. This evidence suggests that bannerstones were not being manufactured and perforated slabs were not produced or used. However, four soapstone bowl sherds that are part of the same vessel were present at 9RO7; this artifact category was absent from the Mill Branch component at Lovers Lane, and it is rare in Mill Branch contexts throughout the central Savannah River region.

Although metavolcanic hafted bifaces are present in significant numbers, there is no evidence that they were being manufactured on site. The data also suggest that Coastal Plain chert tools were being recycled and resharpened; a significant expedient quartz industry was used to augment the supply of chert. All chert associated with the Black Shoals phase at 9RO7 was from the Coastal Plain, and most of it probably from the Brier Creek region in the central Savannah River valley.

No ceramics attributable to the Black Shoals occupation of 9RO7 were encountered. As noted previously, pottery occurs at some sites in the central Oconee and Upper Ocmulgee regions in this era, but sherd frequencies are always very low.

Special Activity Sites. There are also two categories of special activity sites associated with the Mill Branch and Black Shoals phases. Numerous examples of these site types have been documented throughout the three catchment areas included in Mill Branch/Black Shoals territory. The first is characterized by dense and extensive concentrations of metavolcanic debitage, and evidence of extensive hafted biface manufacture. The assemblages associated with these concentrations are limited to an expedient quartz industry and a very restricted use of cryptocrystallines. Soapstone cooking implements, usually bowls, sometimes occur as well.

Site 9RO20 is an example of this site type. Although discrete areas of very dense metavolcanic debitage concentrations were present, no Late Archaic hafted bifaces manufactured from this material were recovered. Metavolcanic preforms and bifaces that may have been preforms were present, however. There is also evidence that an expedient quartz technology was used for domestic needs. Chert constitutes only 5.9 percent of the lithic material, and it was primarily limited to hafted bifaces and bifaces. Since chert debitage frequencies were very low, and almost all specimens were small bifacial thinning flakes, it appears that chert was being recycled or resharpened. At least two soapstone bowls are represented by seven sherds at 9RO20. Four fiber-tempered sherds with drag and jab surface designs and one exhibiting a plain surface were present as well. There was no evidence that a structure was associated with this assemblage.

These sites have been interpreted as special extraction locales geared primarily toward the manufacture of metavolcanic hafted bifaces. The adjunct assemblage is thought to be attributable to food processing and preparation used to sustain those involved in hafted biface manufacture. No evidence of habitation architecture is present at these locations. It is suggested that structures were probably present but insubstantial, made to last for no more than a few days.

The second type of special activity site is interpreted as a short-term encampment. Sites of this nature are ubiquitous, and they exhibit a light to moderate amount of metavolcanic debitage and few, if any, tools made of this material. Often this is the only evidence for a Late Archaic presence. It is suspected that these were brief stopovers, perhaps during hunting episodes.

Local and Regional Settlement Organization. The following discussion on local and regional settlement patterns begins at the local level and focuses on comparisons between the Upper Ocmulgee, central Oconee, and central Savannah River. This is accomplished by assessing how local settlement in the former two regions conforms to the currently accepted model of Late Archaic settlement in the latter drainage system. Based on that analysis, a revised settlement model for the region is offered.

The prevailing model of Late Archaic settlement in the study region is based on extensive archaeological investigations in the central Savannah River region over the past two decades (Brooks and Hanson 1987; Sassaman 1983; Sassaman et al. 1990). This scenario posits that groups congregated in large numbers at specific locations along the Savannah River during the spring and summer (Figure 19). Base camps were established near the mouths of large tributaries too; they functioned as multihousehold staging areas. In addition to subsistence and non–subsistence-related production, rituals were performed, information was exchanged, and social obligations were created, met, and reinforced at this time.

In the fall and winter months, small groups dispersed into the uplands along smaller tributaries and led a relatively autonomous existence within specified foraging zones. The subsistence economy was probably focused on hunting deer and other game and harvesting mast resources.

According to the model, aggregation and multihousehold domestic sites were used during the spring and summer. The fall/winter dispersal was a time when small, isolated homesteads were established in the uplands along smaller tributaries. Short-term logistical forays were

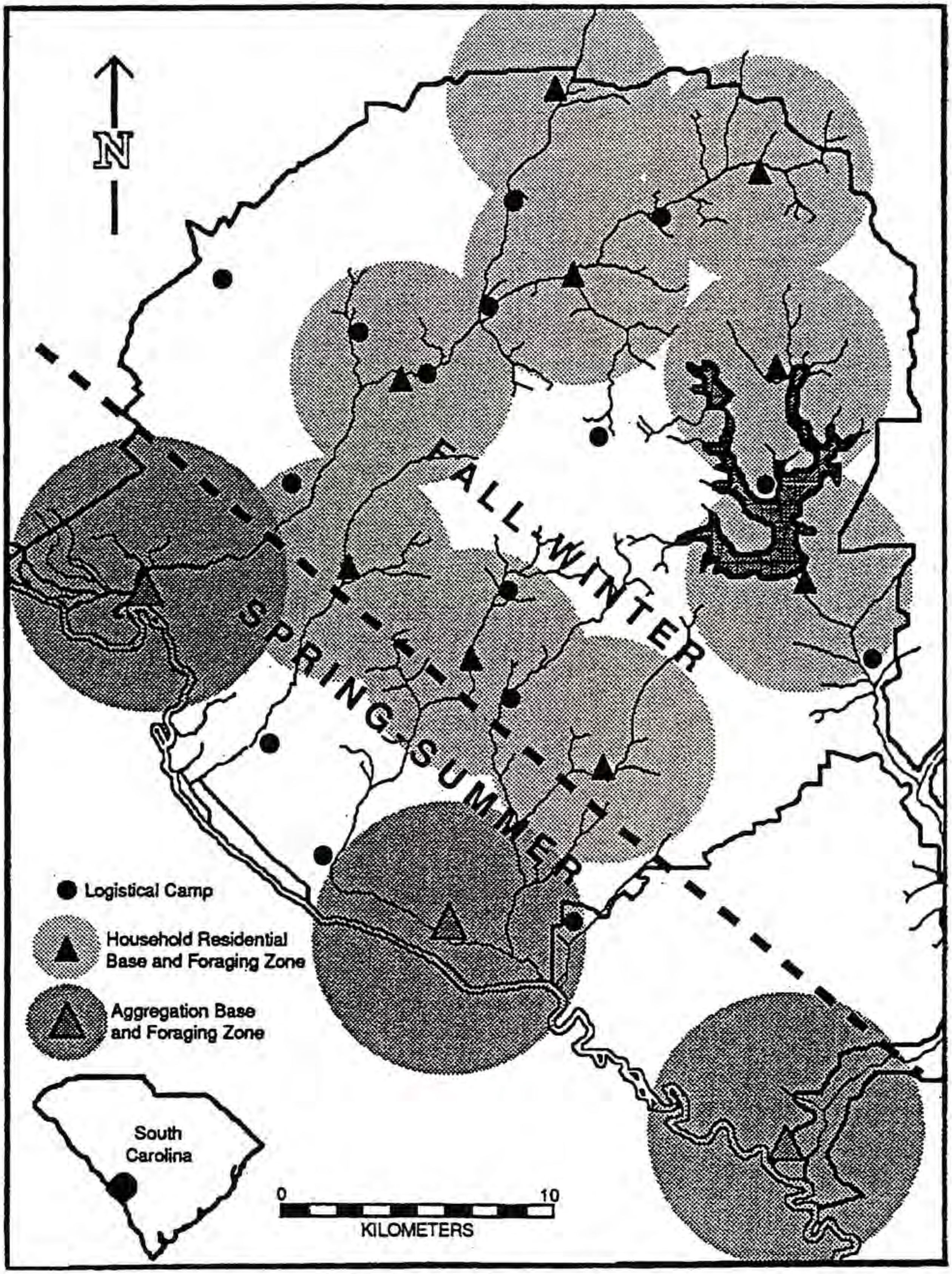

Figure 19. Model of Late Archaic Settlement Organization in the Savannah River Region (Hanson and Brooks 1987; reprinted from Sassaman et al. 1990).

launched from these places. Activities of this nature are expressed in assemblages associated with both types of special activity sites mentioned previously.

Black Shoals settlement organization in the Upper Ocmulgee and middle Oconee catchments strongly corresponds to that predicted by the Savannah River model for periods of dispersal (see Figure 10).

Sites exhibiting characteristics of the single-household domestic type, which are demonstrative of a fairly long-term autonomous occupation, occur at or near stream and river confluences. Several intensive special activity loci are usually nearby and tend to occur in groups along stretches of smaller tributaries. On a scale of higher resolution, many less intensive special activity sites dot the landscape between and around the higher-ranking sites (see Figure 10).

Aggregation sites and multihousehold domestic sites are notably absent from the Upper Ocmulgee and middle Oconee catchments. This absence is particularly noteworthy given the strong similarities between these areas and the central Savannah River region in every other aspect of the Mill Branch phase.

The activities at aggregation and multihousehold sites appear to have been integral to the reproduction of society. It was at these locations that Mill Branch groups in the central Savannah River area, created, renewed, expressed, maintained, and negated the social, technological, and economic forms that gave them their identity.

There is no indication that people living in the Upper Ocmulgee or middle Oconee drainages congregated in multiple households, let alone in large numbers. Under those social conditions, it is unlikely that an independent social identity was developed and a frontier maintained while a specific material culture was shared with a distant group of people who viewed most or all of those items as very important to the reproduction of their society.

According to direct archaeological evidence, items that are assumed to have been important for exchange (perforated soapstone slabs and winged bannerstones, for example), were manufactured only in the Savannah River region at aggregation and multihousehold domestic sites (e.g., Elliott et al. 1994; Ledbetter 1995). Yet these items are present at single-household domestic sites in the Upper Ocmulgee and middle Oconee. Exchange for these items could be introduced as a reason for their presence, but there is no evidence that they occurred in large numbers or were treated as prestige items. When present, they occur in very small numbers and in utilitarian contexts. If they were prestige items they would at least sometimes appear as caches and/or in nondomestic realms.

Further, there is no evidence that exchange items were produced and exported from either the Upper Ocmulgee or middle Oconee catchments into the central Savannah River region. This is in spite of the fact that many soapstone sources exist in those areas and are known to have been exploited in the prehistoric period (Dickens and Carnes 1983; Elliott 1981).

It is suggested that the people living in the Upper Ocmulgee and middle Oconee catchments during the Mill Branch phase were initially seasonal occupants whose "homeland" was the middle Savannah River (Figure 20). It is postulated that they moved out of the middle

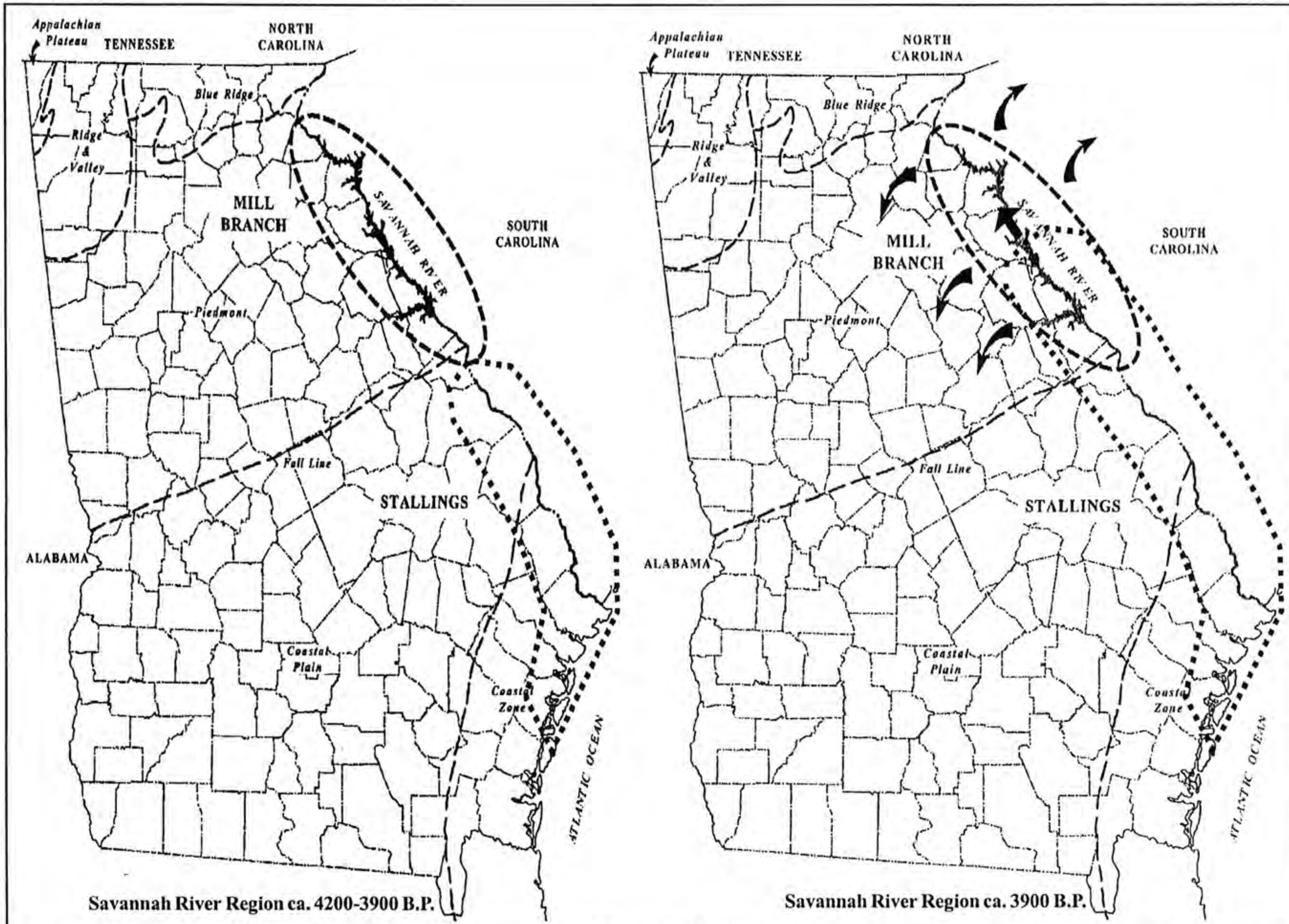

Figure 20. Proposed Model of Regional Settlement Organization during the Mill Branch Phase.

Savannah River into this "hinterland" during the late fall and winter and returned in the early spring to renew social ties and participate in all the activities and rituals associated with reinforcing group identity and maintaining important social institutions.

Sometime around 3850 B.P., possibly because of tensions with coastal groups permanently moving into the interior that some recognize as Stallings Island culture, the occupations in the uplands apparently became permanent and developed into loosely aligned dispersed communities that retained the technological traits we recognize as the Black Shoals phase. A permanent shift to a reliance on upland resources is also assumed at this time.

Mill Branch populations probably lived side by side with Stallings groups for a period of time but were either acculturated or eventually forced to leave the lowlands and floodplains along the central Savannah. The chronological data discussed above suggest that a form of Mill Branch society survived in the Piedmont uplands of north-central and northeastern Georgia and western South Carolina until ca. 3450 B.P. The proposed geographical scope of the later Mill Branch phase is presented in Figure 21, and it has been redefined as the Black Shoals phase in order to accentuate the geographical and chronological differences that separate these two very similar technological traditions..

The settlement model presented above implies that rather long-distance, cross-drainage seasonal migrations took place annually. Beyond the similarities in material culture, site characteristics, and predicted localized settlement organization in times of dispersal, evidence of cross-drainage movement at regular intervals is illustrated by the close relationship between major Mill Branch phase site locations and the nearby trails.

John Goff (Goff n.d.) utilized data compiled by surveyors from A.D. 1730 to 1850 to identify the locations of American Indian trail systems that existed at the time (Figure 22). When the Black Shoals sites included in Figure 10 are plotted in relation to the trail system illustrated in Goff (n.d.), many large sites fall on or very close to a trail (Figure 23). Further, intensively occupied areas along the middle Oconee could have been easily accessed by turning off one of these trails at a river crossing and moving up or downstream. This situation is interpreted as evidence that these trails were in existence at least as early as the beginning of the Mill Branch phase (ca. 4200 B.P.).

Stallings Phase
(Eastern Piedmont/Savannah River Region)

Stallings culture appeared in the central Savannah River region at approximately 3850 B.P. (see Table 2). It is associated with an abandonment of metavolcanic lithic technology, and a subsequent reliance on quartz and Coastal Plain chert (Elliott et al. 1994). The differences in the inherent qualities of these materials resulted in the production of smaller hafted bifaces within the universe of Savannah River morphology. These styles are referred to as Kiokee Creek (see page 48).

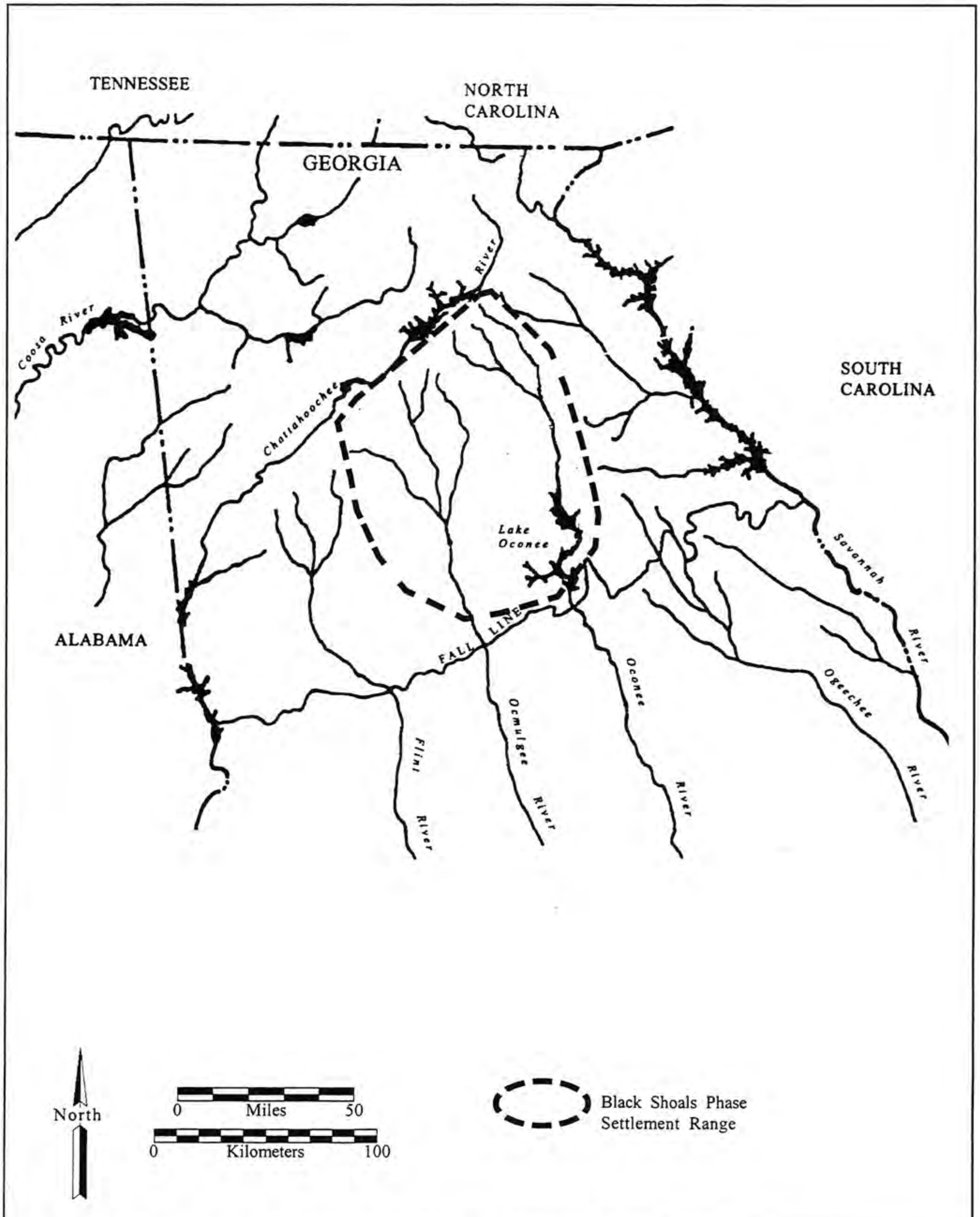

Figure 21. Postulated Geographical Range of Groups Utilizing Black Shoals Technology in North Georgia between ca. 3850 and 3450 B.P.

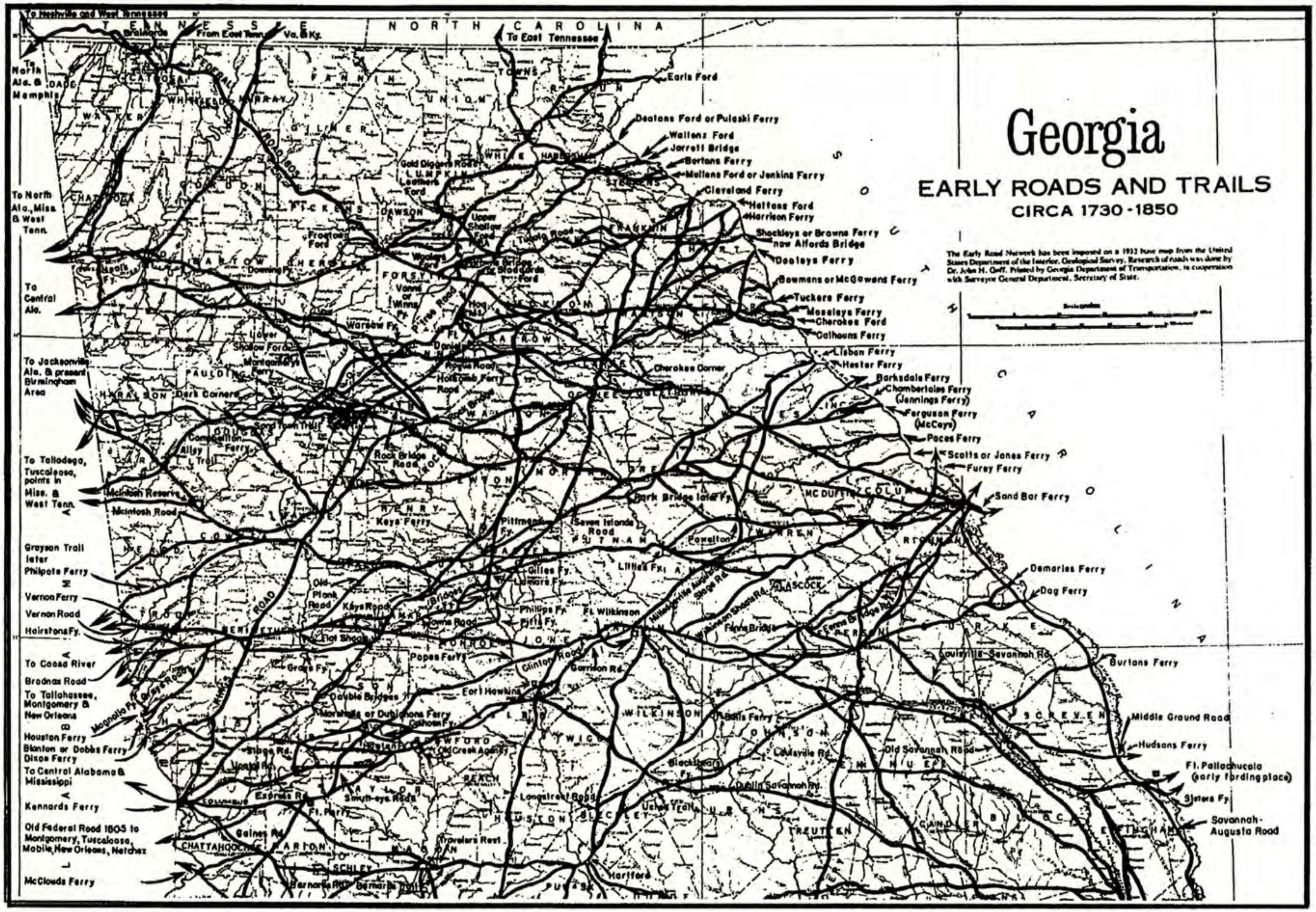

Figure 22. American Indian Trails in Georgia. (Reprinted from Goff n.d.)

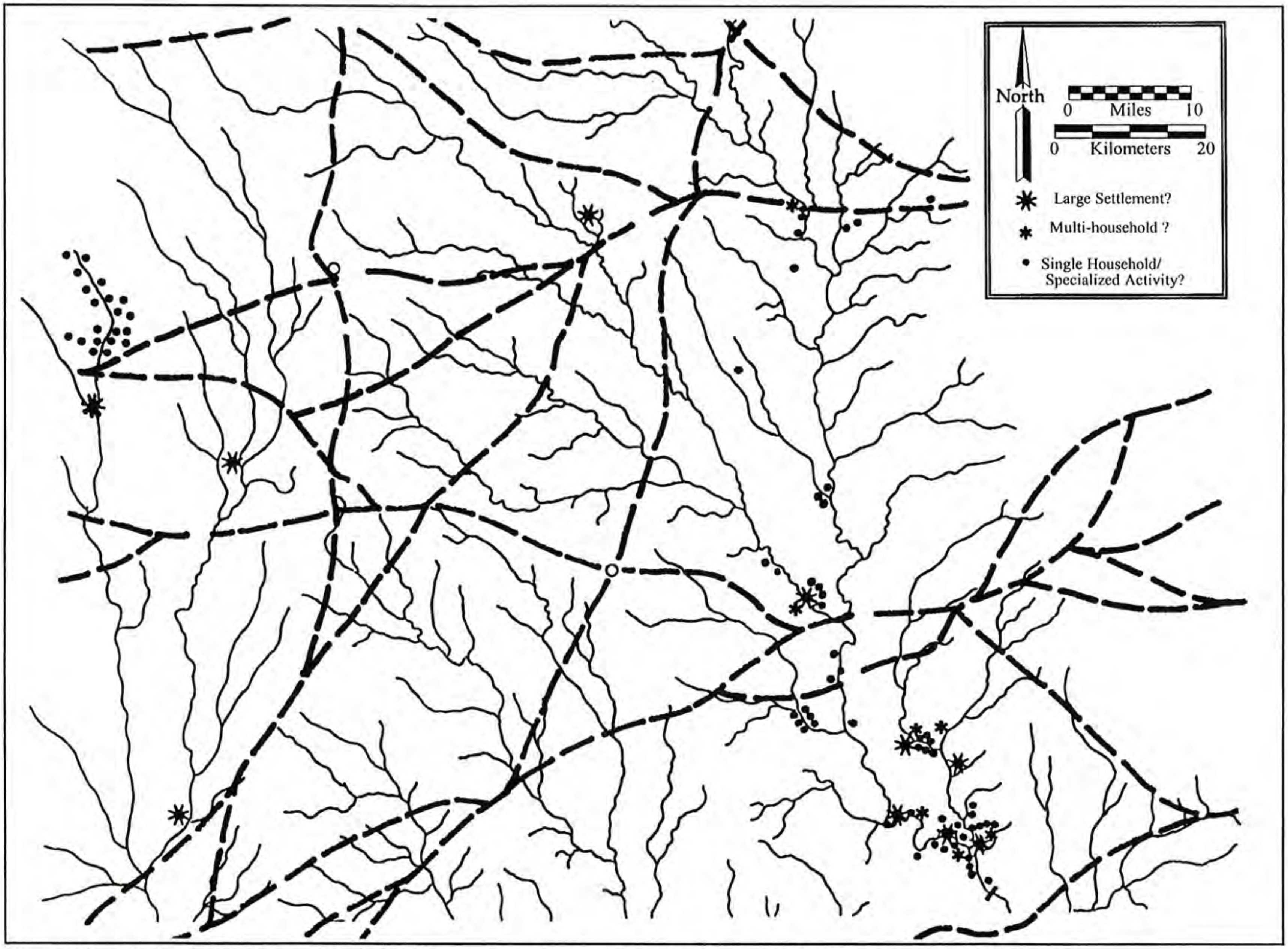

Figure 23. Black Shoals Phase Sites in the Upper Ocmulgee and Central Oconee River Drainages and American Indian Trails Mapped between A.D. 1730 and 1850. (Adapted from Goff [n.d.] and Ledbetter 1995)

Ceramic technology became widely used at this time, while soapstone slab use appears to have diminished. These changes were not manifest in other areas of north Georgia. As previously discussed, people that maintained Mill Branch-derived Black Shoals technology are thought to have formed resistant enclaves in the surrounding regions of Georgia and the Carolinas throughout the Stallings phase.

The historical conditions that created this social landscape are unclear. The shift in preferences with regard to raw material and cooking technology were decidedly directed away from the Piedmont towards the Coastal Plain. It is possible that there was an influx of people, an invading force for example, that "conquered" Mill Branch territory and forced the local inhabitants into the hinterlands. Since trade ties between Mill Branch and Stallings had apparently been established since the beginning of the Mill Branch phase, it is more likely that certain Mill Branch people and/or groups were indoctrinated into the Stallings culture by gaining access to and control of new exchange items. In that case, there may have been power-related incentives to enter the Stallings sphere by gaining access to an established tradition of ceramic vessel production that was only marginally available until that time.

Continuing this point, there is strong evidence that, during the Mill Branch phase, soapstone slab and atlatl weight (bannerstone) production was created by surplus labor directed at supplying Coastal Plain groups with these, and other items, in return for unknown commodities (Sassaman 1993a). Elliott et al. (1994:373) suggest that Coastal Plain chert may have been one of these commodities, as Mill Branch people in the Savannah River drainage appear to have preferred it over metavolcanics in the production of cruciform drills. They also suggest that the rarity of ceramic vessels in Mill Branch contexts may indicate pottery was being imported from southern groups in the Fall Zone and inner Coastal Plain (Elliott et al. 1994: 373).

Mill Branch entrepreneurs may have seized the opportunity to obtain the knowledge needed to manufacture ceramics with the improved technology that had been developed to the south by this time. Not only were there improvements in fiber-tempered technology, the more durable Thoms Creek wares were also being introduced into the region. Control of this improved cooking technology would have been beneficial to individuals and groups seeking to obtain and maintain the kind of power afforded to those that had previously controlled craft specialization in the soapstone and groundstone industry. The latter of which had lost its value because of the improvements in ceramic technology (Elliott et al. 1994; Sassaman 1993a).

As the new intra and inter-regional power structure altered existing social and political boundaries between and within the Piedmont and Coastal Plain, certain Mill Branch groups appear to have become disenfranchised. As unfavorable political developments began to unfold, these groups apparently decided to establish themselves elsewhere rather than submit to the new social and technological conditions imposed upon them by the Stallings influence. The results of these actions have been detailed above.

Chronology. There are more than 50 published radiocarbon dates from the Piedmont, Fall Zone, and Coastal Plain provinces that are associated with Stallings culture (Elliott and Sassaman 1995: Appendix A; Sassaman 1997). Conventional ages from Piedmont contexts generally range from 3928±97 B.P. (UGA-6322) to 3410±80 B.P. (38AB288); a few earlier and later dates occur outside this range, but they are in the minority (Elliott and Sassaman 1995: Appendix A). With the exception of the 9BL69 assays discussed below, all of the Stallings radiocarbon dates are from the Savannah River Piedmont, Fall Zone, and throughout the coastal region.

The oldest reported Piedmont date is from Victor Mills in the extreme southern portion of the province; wood charcoal recovered from Stallings contexts returned a conventional radiocarbon age of 4090±110 (Beta-79984) (Elliott and Sassaman 1995: Appendix A). The youngest is 2800±70 B.P. (Beta-71592), which was obtained from wood charcoal recovered from an excavation level at 9BL69 that contained Stallings ceramics (Espenshade et al. 1994)

The former date is not exceptionally early when one considers the one sigma range, especially given that Victor Mills is very near the Fall Zone. The youngest date is about 600 years to late, however, and the three other dates for the Stallings component at 9BL69 (3320±70 B.P.; Beta-71955), (2970±80 B.P.; Beta-71953), and (2940±60 B.P.; Beta-71954) are later than the suspected demise of Stallings culture in the Savannah River valley. Site 9BL69 is located in the Piedmont Oconee River region, and it is possible that the Stallings phase in this area lingered until the end of the Late Archaic period. If so, the 9RO18 habitation in the Big Haynes Reservoir project area may date to this time as well.

If this pattern holds, the same region that apparently harbored enclaves of Mill Branch populations resisting the rise of Stallings culture, may have been home to those that left the Savannah area during Stallings' demise. There are very little data on the terminal Archaic of north Georgia, and until evidence to the contrary is gathered, it is suggested that the concept of a persistent Stallings phase in the Piedmont be considered a subject for future research.

Material Culture. As mentioned previously, Stallings hafted biface technology is represented by the Kiokee Creek type, which has been described above. Soapstone cooking slabs continued to be manufactured and used, but on a smaller scale. In addition, these implements are thicker, and do not appear to have been curated or recycled to the extent that they were during the Mill Branch phase. This suggests that they had lost much of their value in terms of trading commodities (see above).

Atlatl weights are very uncommon and, perhaps, absent from the tool repertoire. The use of cruciform drills also decreases, probably because of the reduction in soapstone slab production and recycling. This situation reflects the reduced exchange value of these items as well.

In general, therefore, Stallings lithic technology appears to have reverted to a much more generic, utilitarian role in the organization of labor. Soapstone slabs and groundstone atlatls and bannerstones apparently lost prestige by this time, and they no longer played a significant role in social reproduction. In terms of value and status, other media and forms of material culture may have taken their place. Ceramics, and perhaps an organic-based industry (e.g.; carved bone pins?), are the most likely candidates in this regard.

Settlement. In terms of Stallings settlement, increases in population, site size, site permanence, and site density are evident within the Savannah River catchment (Elliott 1995; Elliott et al. 1994). Evidence from site 9BL69 and 9RO18, however, indicate that Stallings occupations probably occurred in the Lake Sinclair region of the Oconee River drainage and as far west as the Upper Ocmulgee catchment, in the apparent heart of Black Shoals territory (Espenshade et al. 1994; Stanyard 1997).

It is possible that the Stallings intrusion into these areas occurred at or after ca. 3400 B.P., when Stallings culture essentially disappears from the archaeological record in the Savannah River drainage. In addition to the radiocarbon data cited above, this possibility is supported by the recovery of soapstone sherds in lieu of cooking slabs at both sites. As was also discussed previously, that intrusion may represent the demise and dispersal of Stallings groups in a reprise of historical events that occurred approximately 400 years earlier, when apparently disenfranchised Mill Branch groups left the Savannah River region.

Unfortunately, there are insufficient data outside of the Savannah River region to raise this issue beyond the level of speculation. This is primarily because the Stallings construct is relatively new, and there has not been a concerted effort to examine the settlement practices and geographical range of the Stallings phenomenon outside the Savannah River valley.

Subsistence. The susbsistence economy remained focused on hunting, gathering, and fishing. In terms of botanical resources, there is no strong evidence of wide-scale horticulture, and the direct evidence from such sites as Lovers Lane (9RI86) indicates that mast resources were harvested and presumably consumed. As was the case during the Mill Branch phase of Savannah River history, it is probable that garden horticulture was practiced to some degree.

The intensification of freshwater shellfish exploitation along the Savannah River is evident by the presence of shell middens at several Late Archaic sites, examples being Stallings Island (Claflin 1931), Lake Spring (Miller 1949), and Mims Point (Sassaman 1993b) (see Elliott 1995). Some have argued that this intensification was a result of resource stress caused by population coalescence (Elliott et al. 1994).

Undifferentiated Post-Stallings Phase (Eastern and Central Piedmont)

The archaeological record of the post-Stallings era (ca. 3500-3000 B.P.) is rather obfuscated, and appears to be associated with the demise of large, cohesive social entities. During this time, a wide variety of lithic materials were used in the chipped stone industry, which includes straight-stemmed, broad-bladed forms resembling the Kiokee Creek type. Fiber-tempered ceramic technology is replaced by the Thoms River and Refuge tradition in the Fall Zone and Coastal Plain. In the Piedmont, sand-tempered Dunlap Fabric Impressed wares had been developed by the end of the period.

Soapstone bowls occur to the exclusion of soapstone cooking slabs, which denotes the demise of the latter objects as both exchange goods and utilitarian implements. The increase in soapstone bowl use in the two centuries immediately following the Stallings phase is associated with the participation in a long distance exchange network that reached as far as the Gulf Coast and Poverty Point. That network probably collapsed by 3200 B.P., and certainly by the end of the period. The popularity of soapstone bowls diminished as advances in ceramic technology fostered the production of sturdier ceramic vessels that functioned in a variety of capacities formerly relegated to soapstone containers, which included food processing, cooking, and storage.

Settlement appears to have shifted to the floodplains, and upland occupations were less frequent. A change in focus from the Coastal Plain to the Fall Zone and Piedmont portions of the Savannah River drainage is evident, and settlement is widespread. Populations appear to have been dispersed, however (Elliott et. al. 1994:372).

VII. THE NORTH GEORGIA DATABASE

THE SITE FILE DATA: PROBLEMS AND BIASES

The data presented in the following pages are derived from the Georgia Archaeological Site File (GASF). It is, however, important to note that there are obvious unavoidable and avoidable problems and biases.

In terms of the unavoidable, Elliott and Sassaman (1995:125) have already noted that the quality of the data in the site file is only as good as the information submitted by the archaeologists. Much of the early information supplied to the site file was compiled when regional chronologies and typologies were non-existent, or in their early stages of development. Before the advent of mandated CRM studies, archaeological data were often obtained by salvage operations working on absent or very small budgets and within very limited time constraints. Even today, there are problems with Archaic period typologies that continue to obfuscate the archaeological record. Finally, a great deal of data have been derived from major reservoir projects that tend to be located in the Piedmont, this has created a bias with regard to site density distributions in terms of geography and topography.

The size of the database, however, is sufficient to overcome some of these unavoidable drawbacks, and it provides a useful perspective on the nature of Archaic period archaeology if the analysis is kept to a relatively broad scale.

In terms of problems and biases that can be rectified, the following suggestions are offered. Although the site file data have been computerized at great expense and professional effort, the database currently available to the archaeological community at the GASF (accessed through Microsoft Access®) is organized in a manner that is very cumbersome and time consuming. The program requires several levels of repeated queries when multiple variables—sites by component by county, for example—are requested. This simple crosstabulation would take many hours for even small regions. If the data were organized more efficiently, and/or accessed with a different program—SPSS® or SYSTAT®, for example—the database would be much more user-friendly. It would help if those programs were available at the site file since some researchers may not have access to them. It is understood, however, that obtaining one or both of these programs for the GASF, and placing the data in an appropriate format, may be cost prohibitive.

Another suggestion is that the GIS data be made widely available, and that the information and programs to run it be located at the GASF. The author had to impose on Mark Williams, Director of the GASF, to obtain distributional data that was only available on his office computer at Baldwin Hall, which is across the University of Georgia campus from the GASF.

GIS systems have become fairly sophisticated, and it is recommended that the GASF add the capacity for a researcher to go that facility and retrieve visual and statistical information concerning the distribution of specific cultural components in relation to physiographic province, county, topography, drainage system, drainage capacity, or any number of environmental conditions. At this time, such an effort is not possible.

These statements are in no way intended to disparage the professionalism or effort that Mark Williams and others have put into upgrading the site files over the last few years. Their work is to be commended for the significant advances they have made. These suggestions are simply intended as constructive input for future improvements at the GASF.

NORTH GEORGIA SITE DISTRIBUTIONS

According to the GASF database, there are currently 19,337 archaeological sites recorded for north Georgia. Archaic period sites comprise 27.4 percent (*n*= 5,303) of that total. Table 8 summarizes site frequencies by physiographic province, and Table 9 summarizes site densities by physiographic province. Visual representations of that data are provided in Figures 24-27.

Table 8. Archaic Period Site Frequencies by Physiographic Province.

Province	E. Archaic	M. Archaic	L. Archaic	Unspecified Archaic	Total
Appalachian Plateau	3	1	1	31	36
Blue Ridge	47	76	68	68	259
Ridge and Valley	77	70	92	95	334
Piedmont	735	1675	1335	929	4674
Total	**862**	**1822**	**1496**	**1123**	**5303**

Table 9. Archaic Period Site Densities by Physiographic Province (per km^2).

Province	E. Archaic	M. Archaic	L. Archaic	Unspecified Archaic	Total
Appalachian Plateau	0.075	0.025	0.025	0.775	0.900
Blue Ridge	0.016	0.025	0.023	0.023	0.086
Ridge and Valley	0.018	0.016	0.021	0.022	0.078
Piedmont	0.039	0.088	0.070	0.049	0.246
North Georgia	**0.033**	**0.069**	**0.057**	**0.043**	**0.201**

Spatial representations of Archaic period site distributions as of May 1999 were produced by Mark Williams, Director of the GASF. Figures 28 and 29 refer to all recorded Archaic period sites, and Figures 30-35 illustrate site locations by culture period.

For the study area as a whole, site density more than doubles between the Early and Middle Archaic periods, according to the GASF data (Figure 24). This may be partially due to population increase, but the primary factor for these results is likely attributable to the foraging nature of Middle Archaic subsistence (see Chapter V). Most of the increase occurred in the Piedmont, where Middle Archaic site density is 225 percent higher than it is for the Early Archaic.

Site densities slightly decreased during the Late Archaic, as populations coalesced and more permanent sites were established. The figure of 0.057 sites per kilometer may be slightly inflated, however, because of the reservoir bias discussed below.

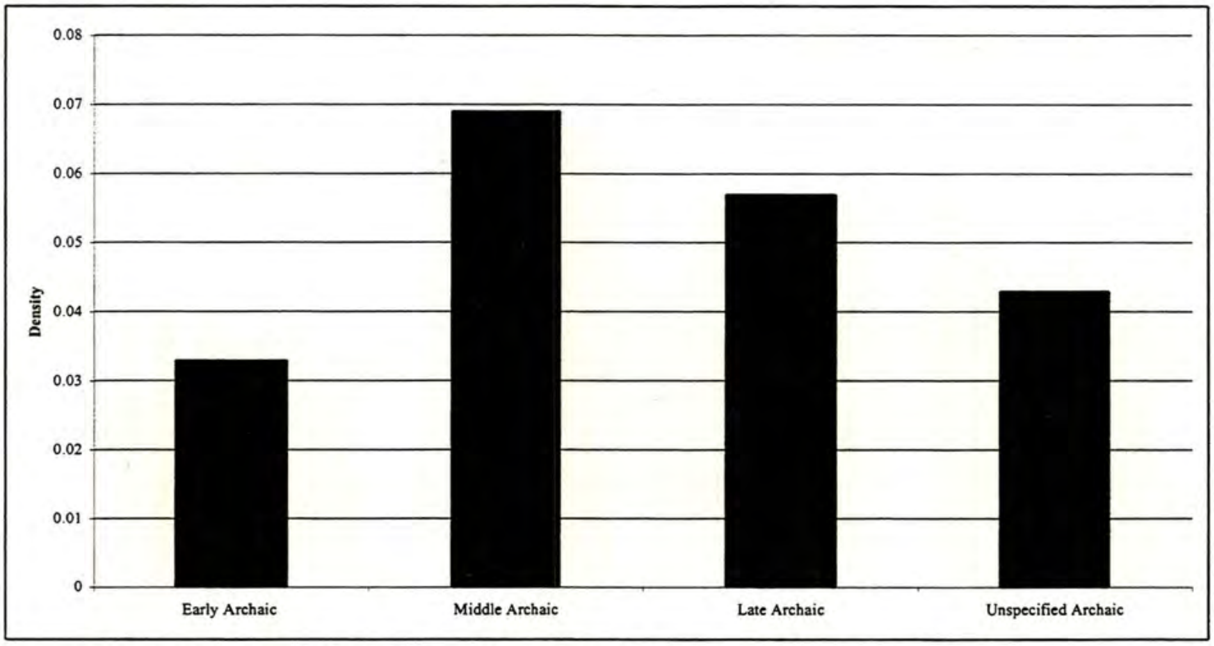

Figure 24. Archaic Period Site Densities in North Georgia by Period (per km²).

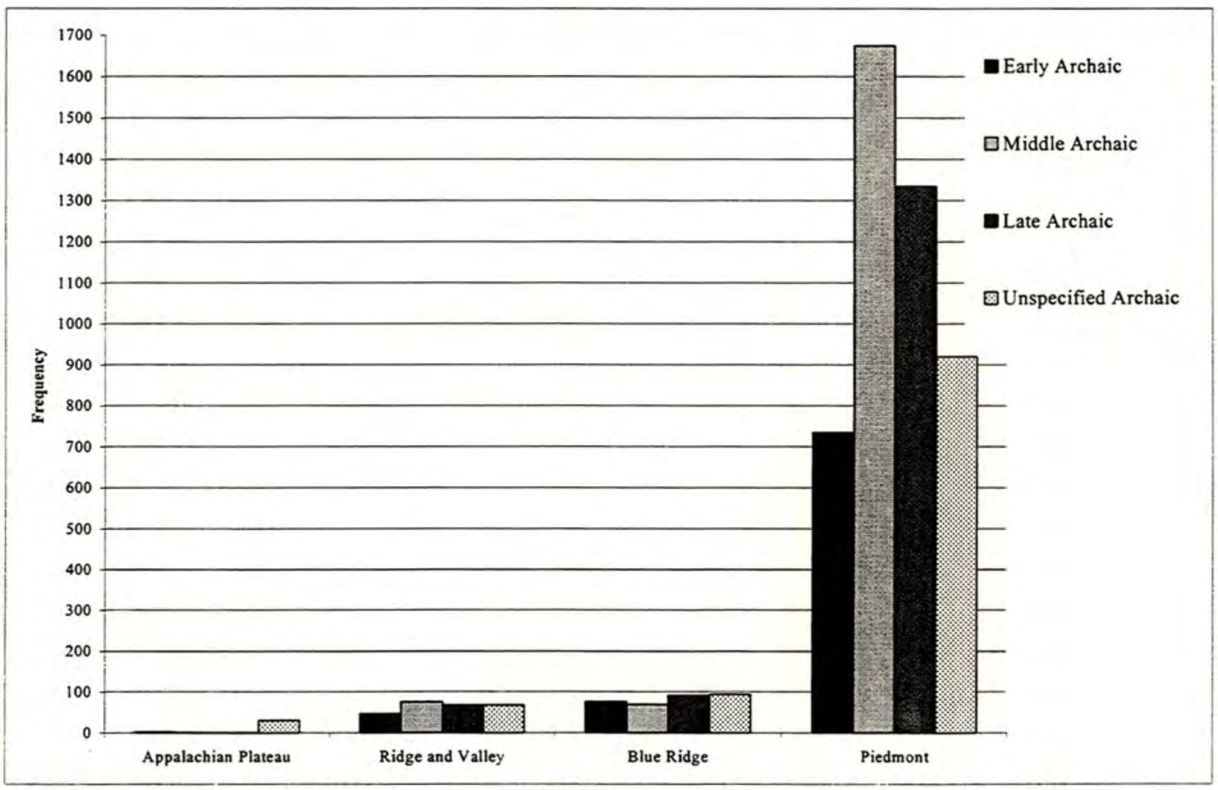

Figure 25. Frequency of Archaic Period Sites by Physiographic Province.

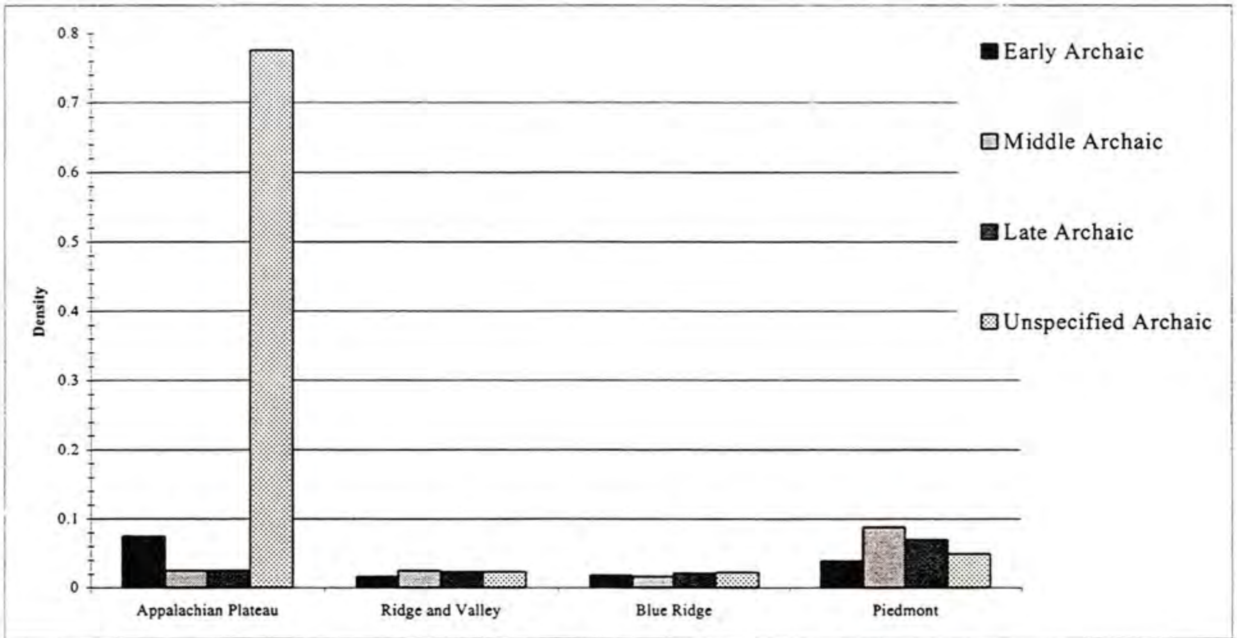

Figure 26. Archaic Period Site Densities by Physiographic Province (per km²).

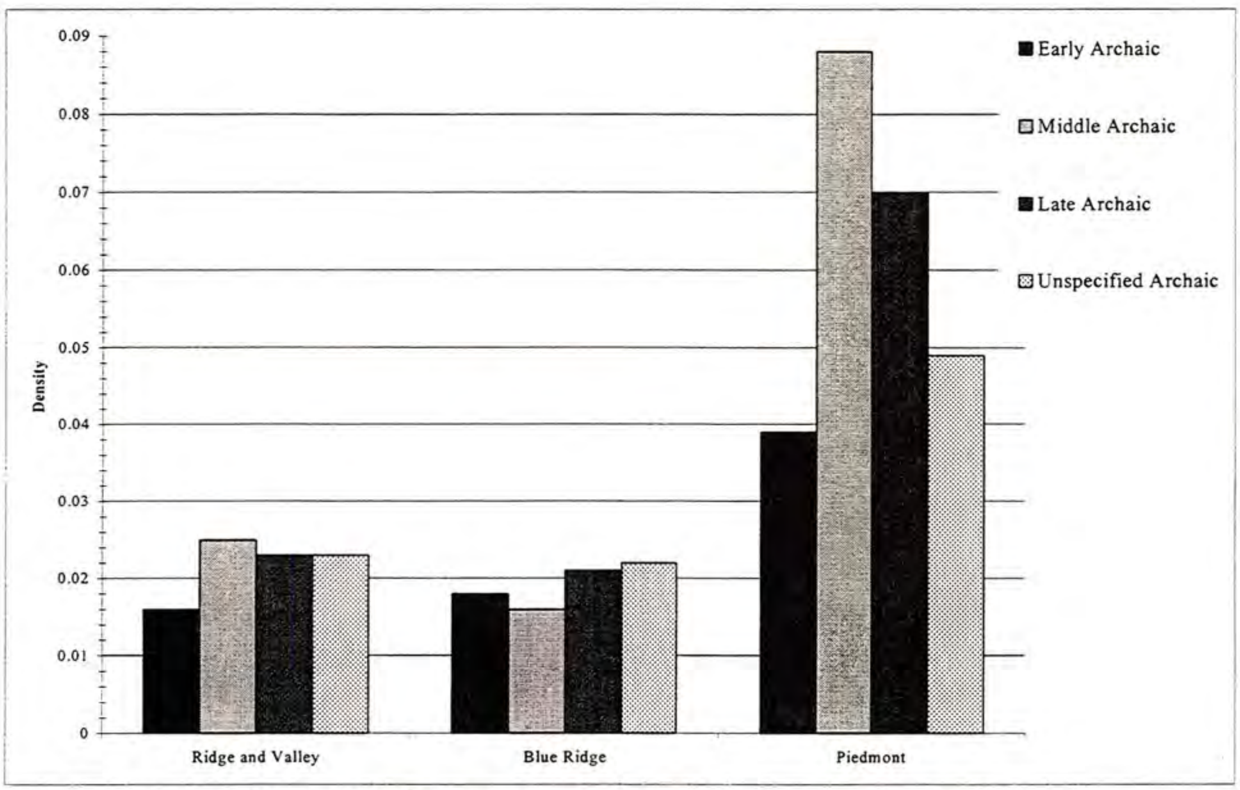

Figure 27. Archaic Period Site Densities by Physiographic Province (per km²).
(Minus the Appalachian Plateau)

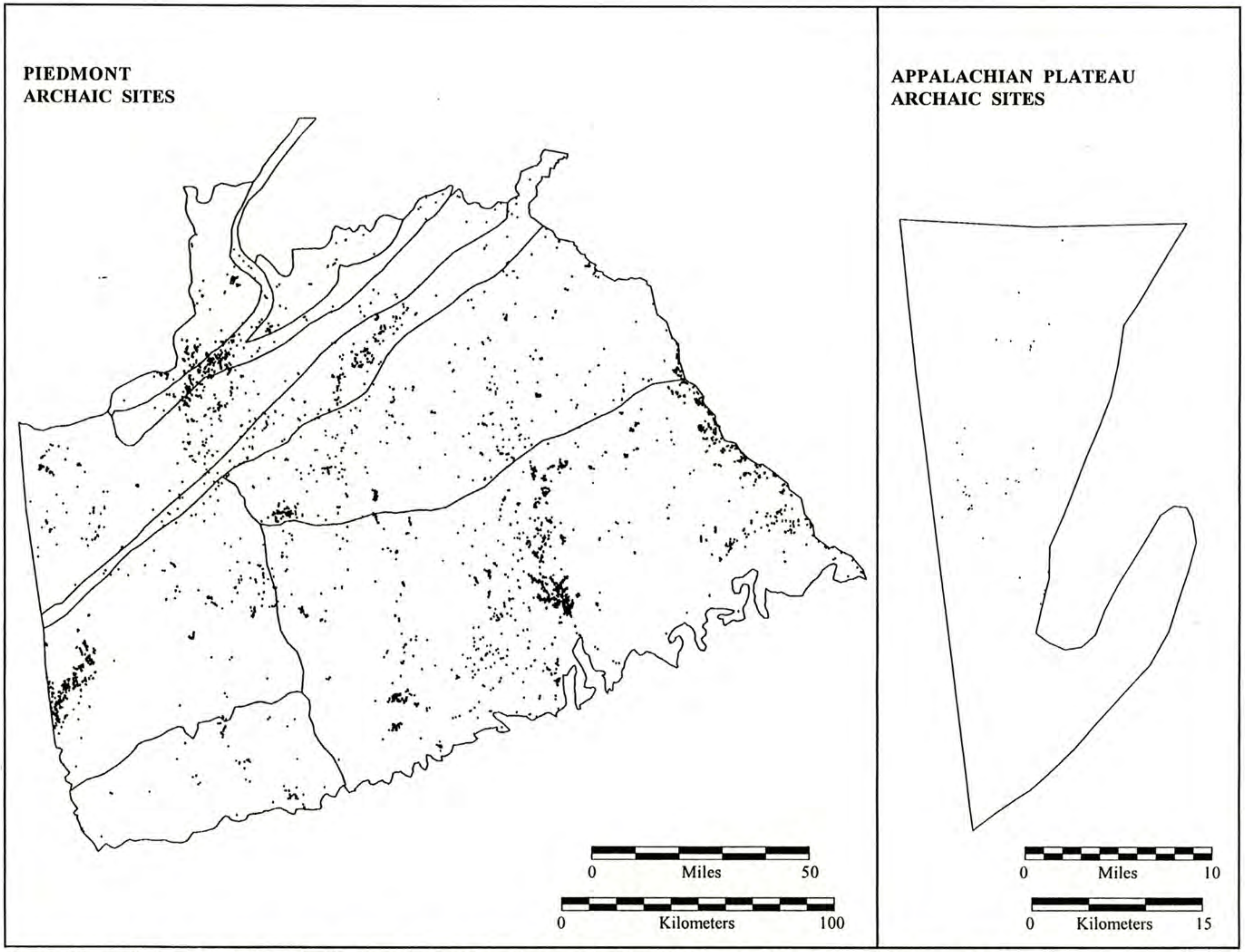

Figure 28. Archaic Period Site Distributions in the Georgia Appalachian Plateau and Piedmont Physiographic Provinces.
(Data provided by Mark Williams, Georgia Archaeological Site File)

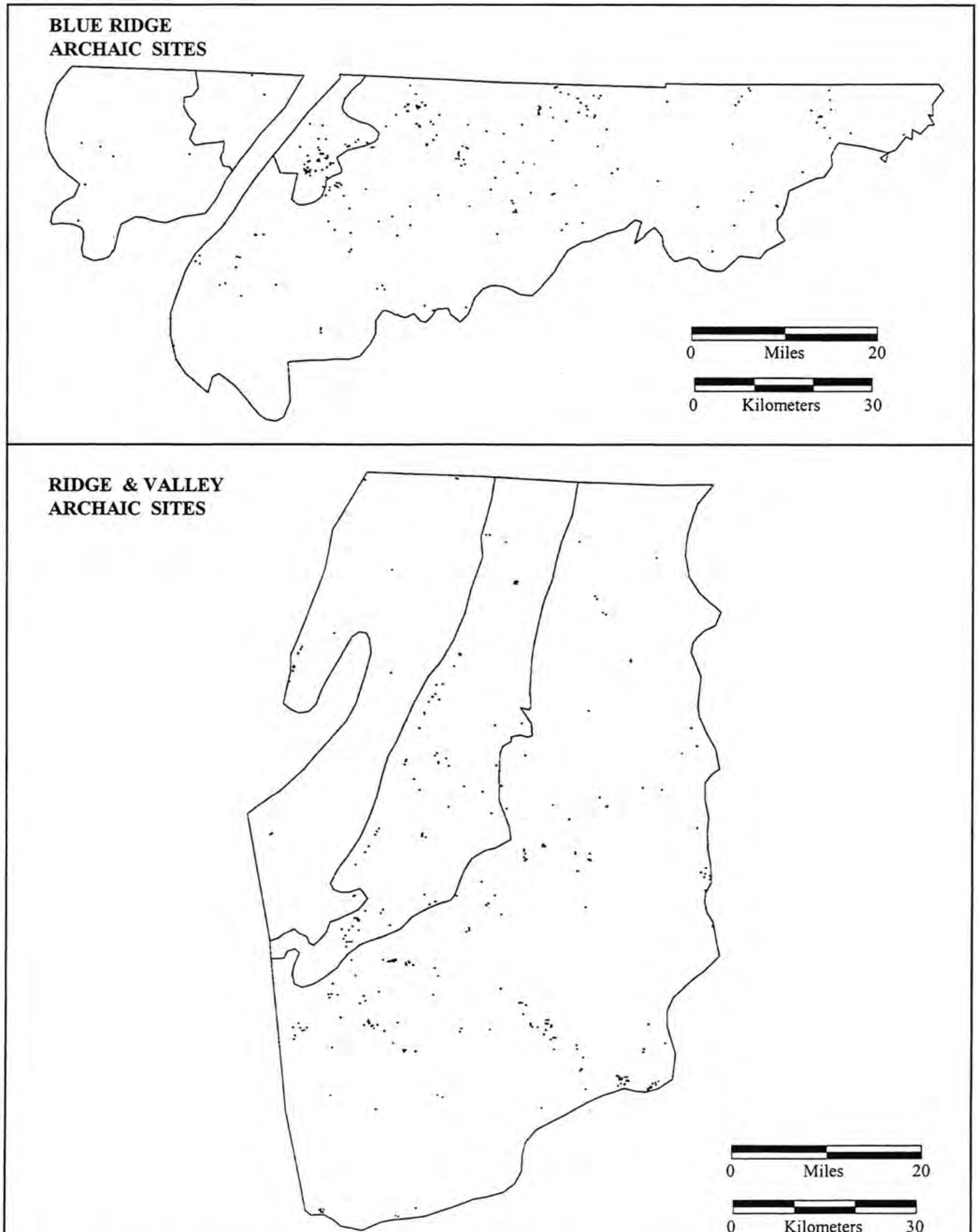

Figure 29. Archaic Period Site Distributions in the Georgia Blue Ridge and Ridge and Valley Physiographic Provinces. (Data provided by Mark Williams, Georgia Archaeological Site File)

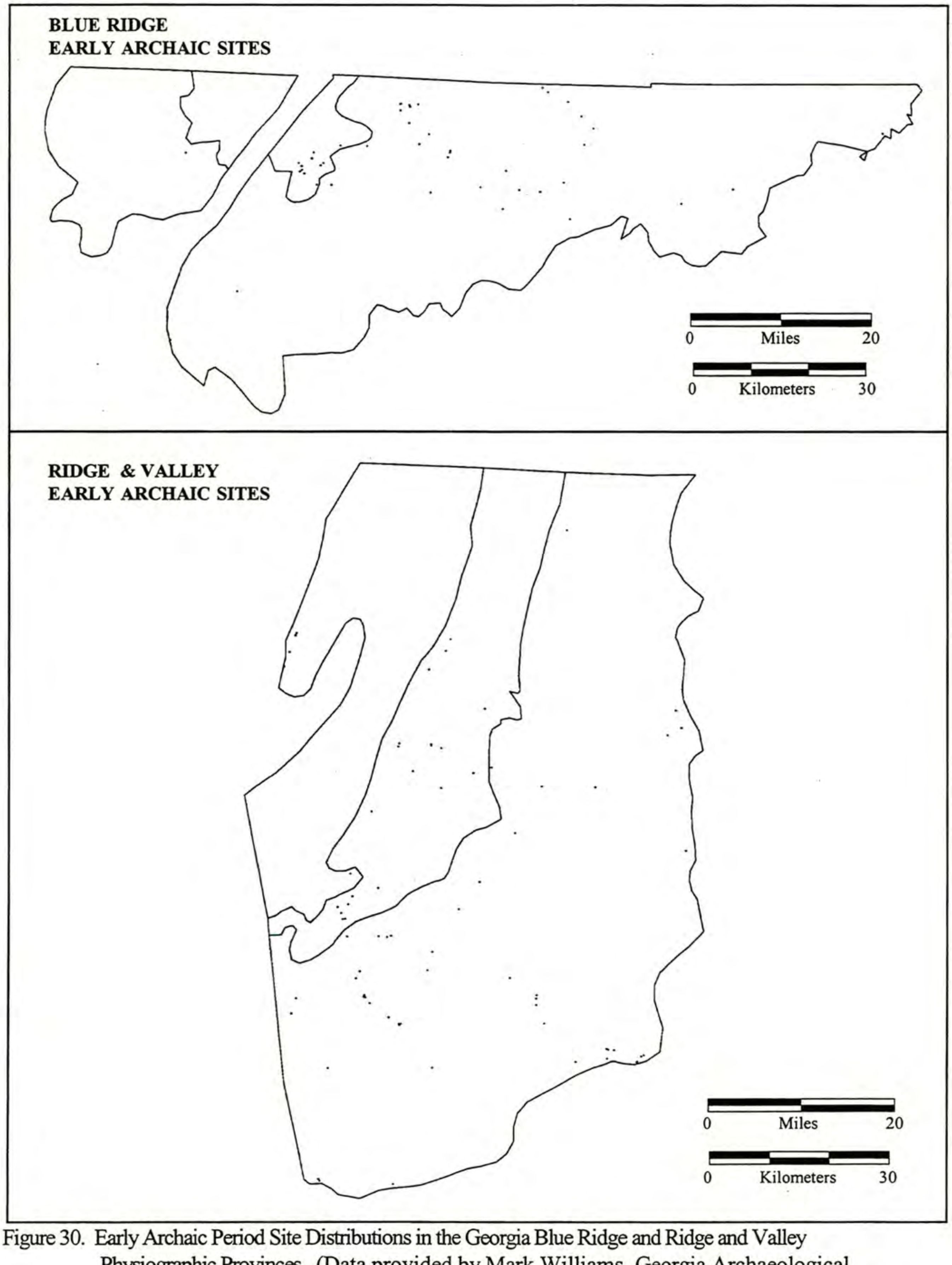

Figure 30. Early Archaic Period Site Distributions in the Georgia Blue Ridge and Ridge and Valley Physiographic Provinces. (Data provided by Mark Williams, Georgia Archaeological Site File)

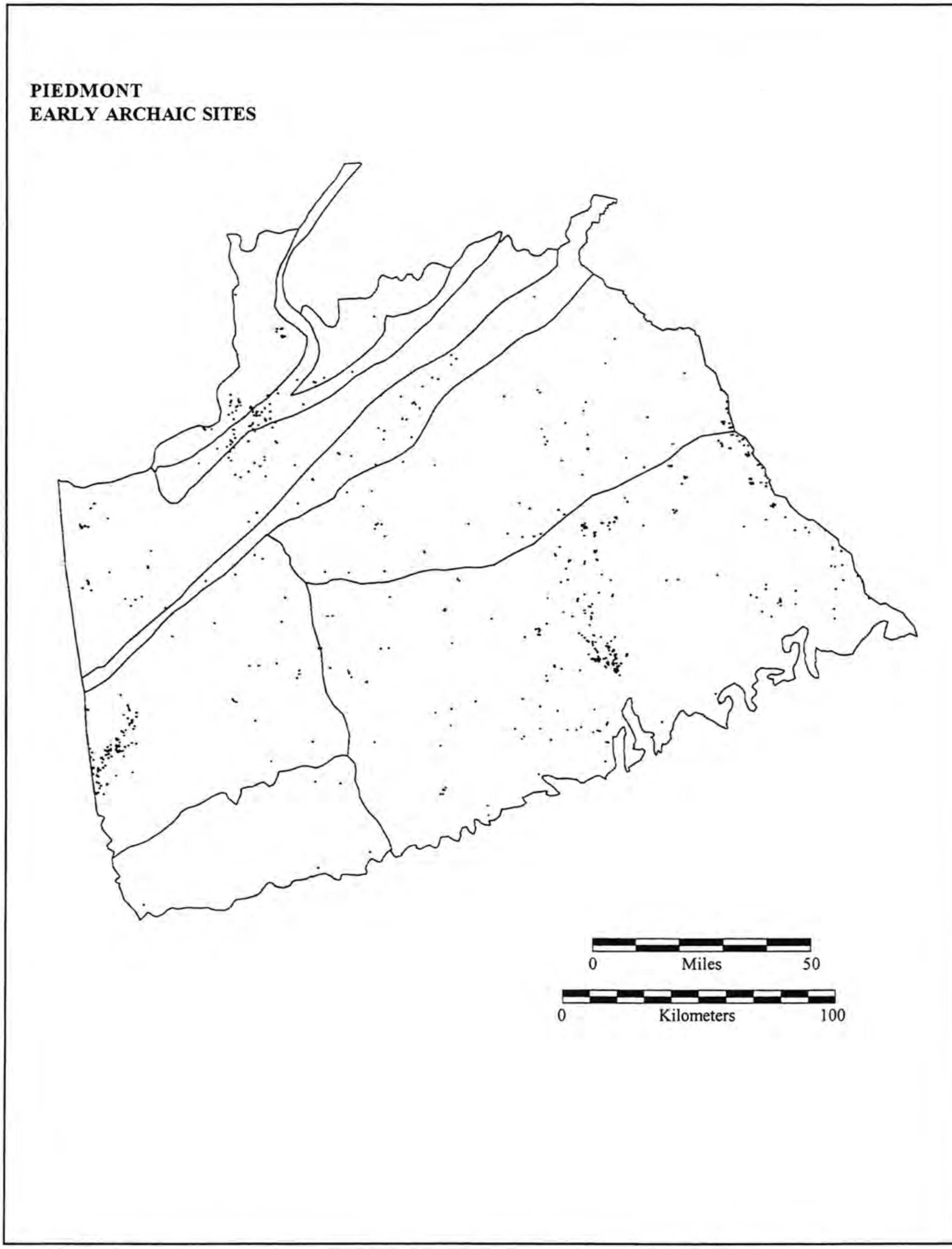

Figure 31. Early Archaic Period Site Distributions in the Georgia Piedmont Physiographic Province. (Data provided by Mark Williams, Georgia Archaeological Site File)

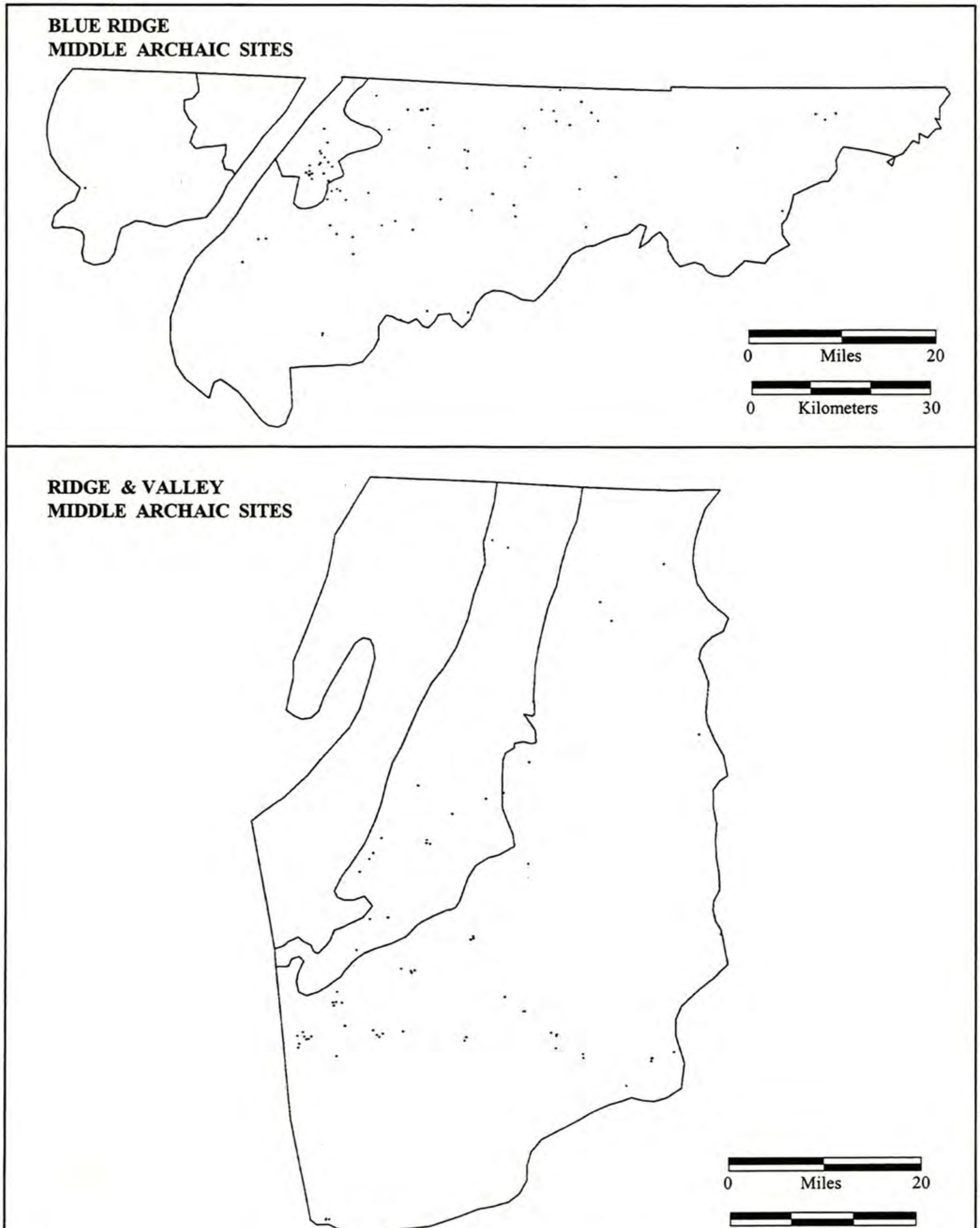

Figure 32. Middle Archaic Period Site Distributions in the Georgia Blue Ridge and Ridge and Valley Physiographic Provinces. (Data provided by Mark Williams, Georgia Archaeological Site File)

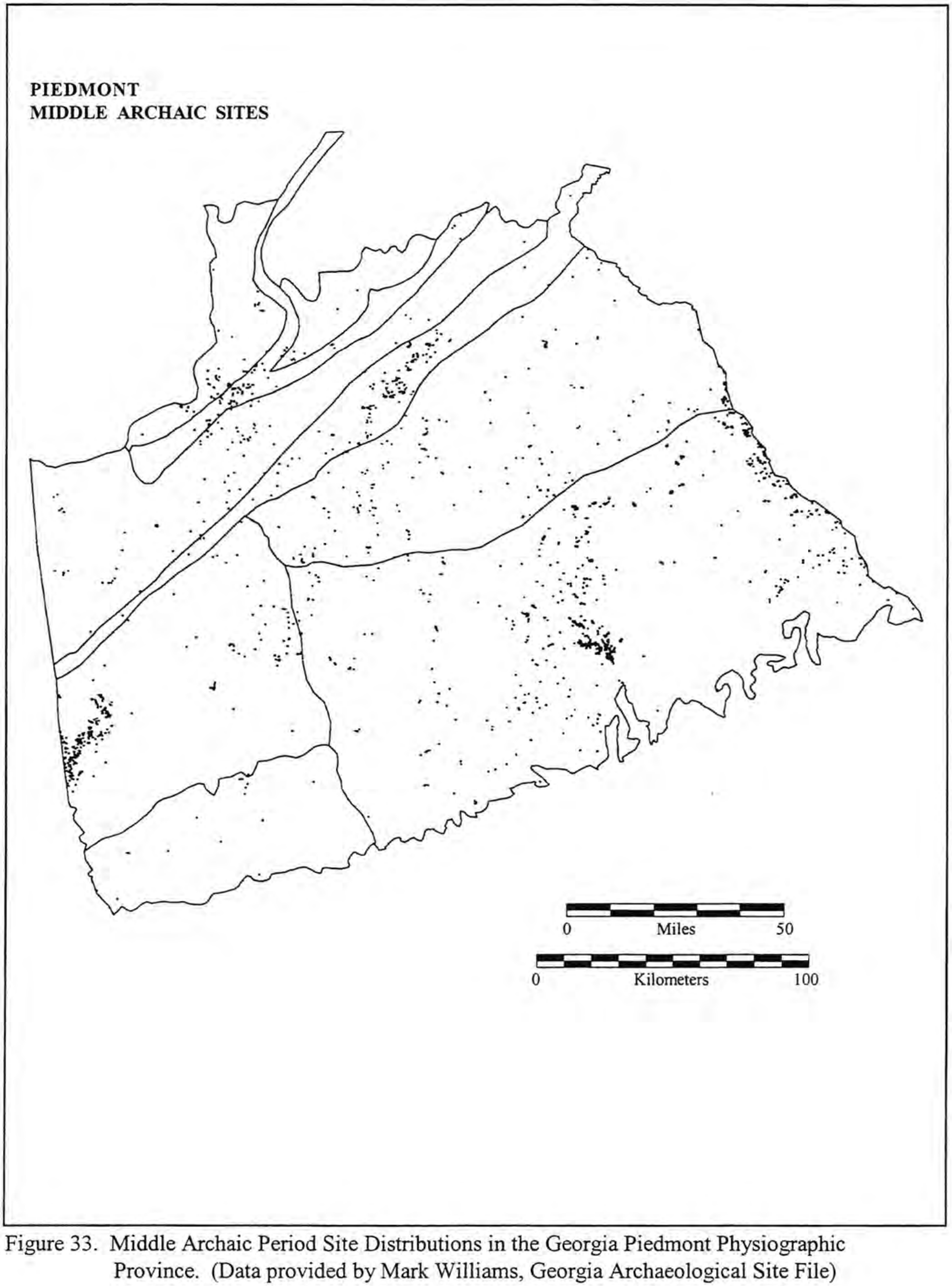

Figure 33. Middle Archaic Period Site Distributions in the Georgia Piedmont Physiographic Province. (Data provided by Mark Williams, Georgia Archaeological Site File)

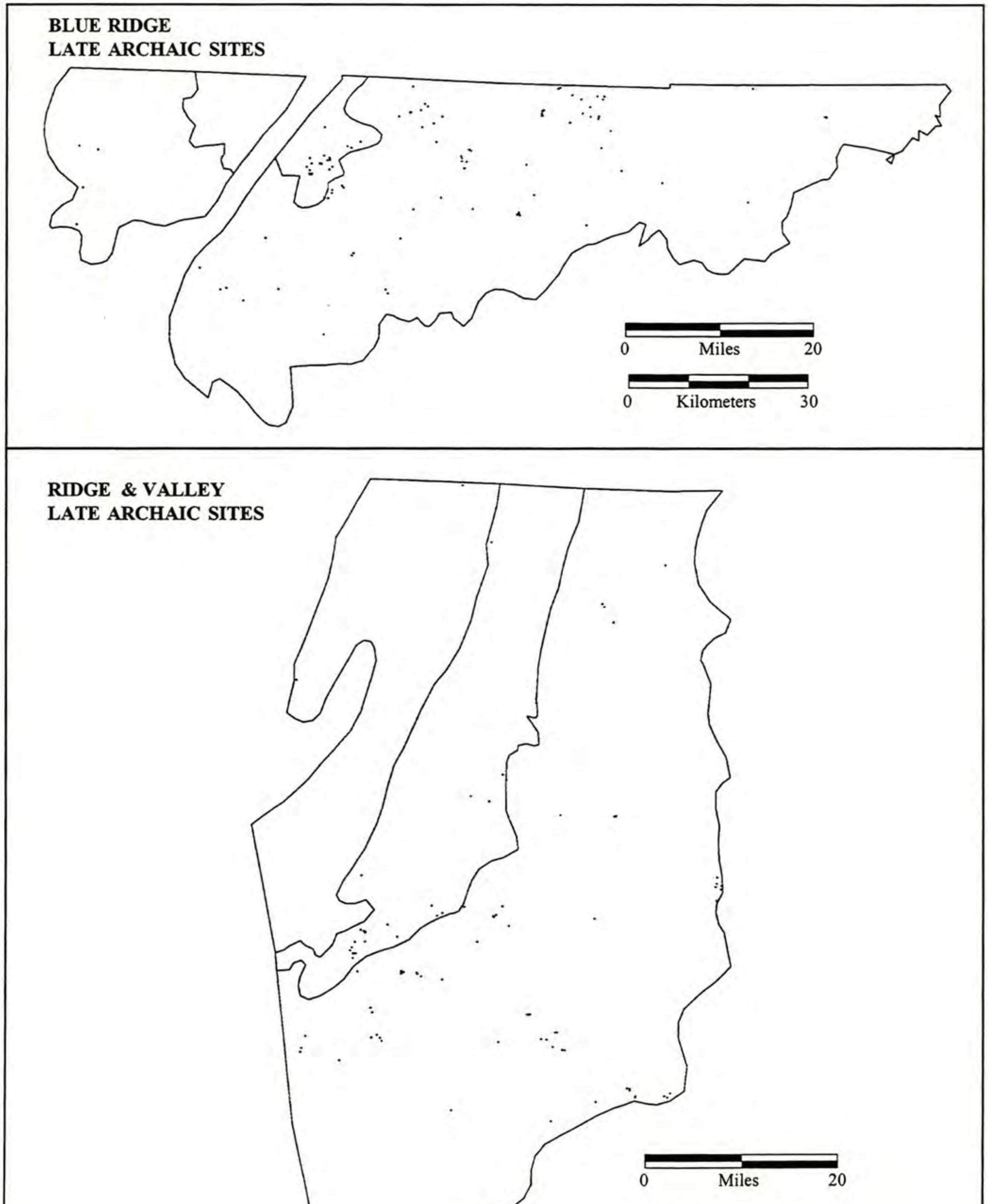

Figure 34. Late Archaic Period Site Distributions in the Georgia Blue Ridge and Ridge and Valley Physiographic Provinces. (Data provided by Mark Williams, Georgia Archaeological Site File)

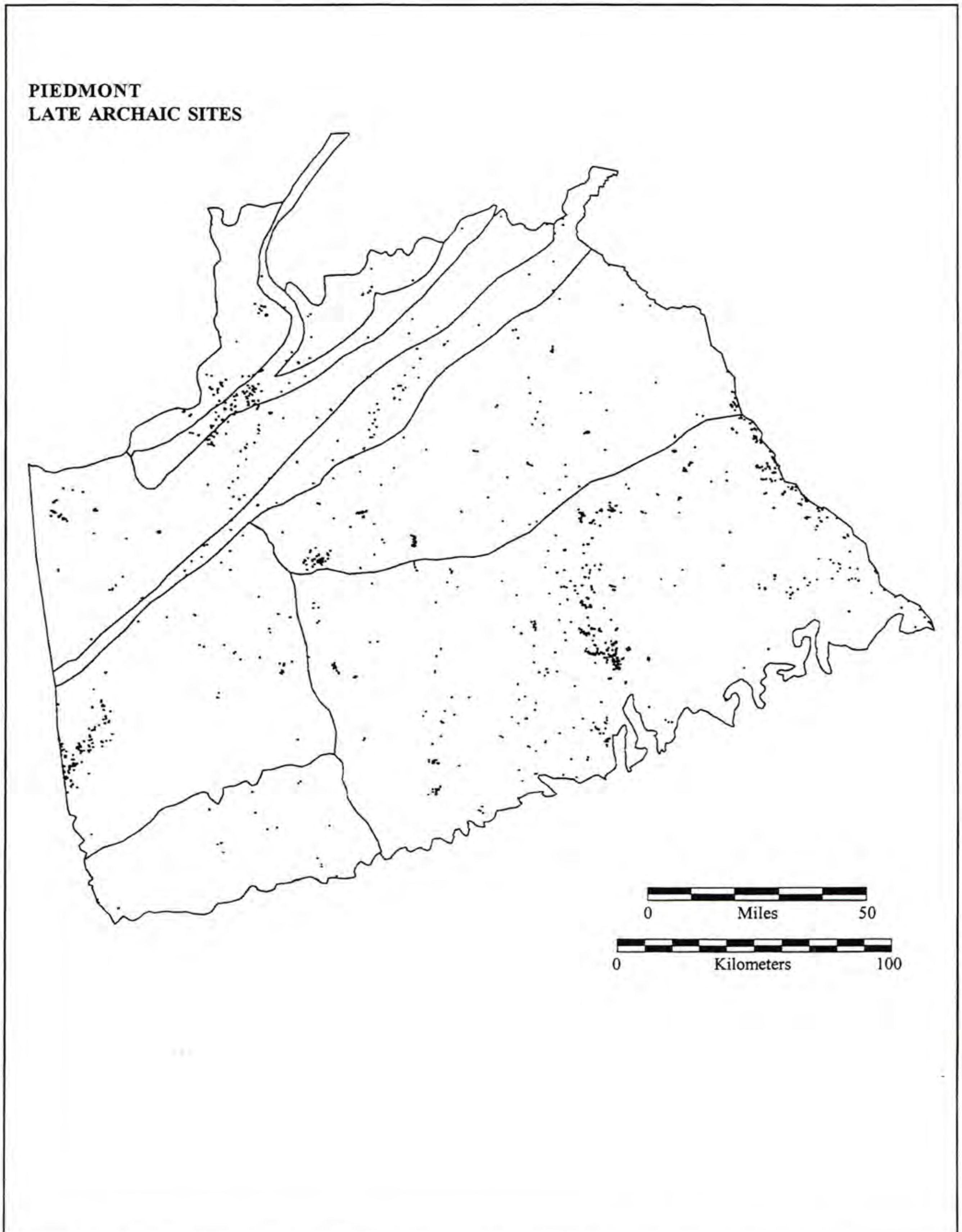

Figure 35. Late Archaic Period Site Distributions in the Georgia Piedmont Physiographic Province. (Data provided by Mark Williams, Georgia Archaeological Site File)

THE APPALACHIAN PLATEAU PROVINCE

Upon first examination, Archaic period site density is disproportionately high for the Early Archaic and Undifferentiated Archaic periods (see Figure 26). The results are misleading, however, and related to the size of the province; it encompasses only 40-km^2, and represents just 0.1 percent of the study area. Archaeological investigations and collector activity have resulted in nearly full coverage of the province, while only a very small portion of the remaining provinces have been investigated. In addition, the small number of identified components—three Early Archaic, one Middle Archaic, and one Late Archaic—indicates that explicitly diagnostic artifacts are not common. This suggests that the visits to the province were, in general, ephemeral affairs associated with short-term extraction. None of the identified sites represent a seasonal habitation, base camp, or any other type of substantial occupation.

BLUE RIDGE PROVINCE

The Blue Ridge appears to have been sparsely populated throughout the Archaic period (see Figure 29). All three subperiods witnessed low site densities and dispersed settlements, according to the available data (Figures 25-27, 29, 30, 32, and 34).

Early Archaic site density is similar to that of the Ridge and Valley province, but considerably less than that of the Piedmont. Site frequencies peak in the Middle Archaic, and the density is appropriately higher. The Middle Archaic peak coincides with the increase associated with the Piedmont province, but it is not as drastic. Late Archaic site frequency and site density is slightly less than those representing Middle Archaic occupations. The decline is not as severe as it was in the Piedmont, however.

In reference to this latter point, Late Archaic groups may have primarily utilized the Blue Ridge province for relatively short term excursions from the Piedmont that were related to specialized resource extraction. This may have resulted in an inflated number of site occurrences as compared to the Piedmont situation, despite a decline in more permanent habitations. In the Middle Archaic, the generalized foraging strategy adopted by increasing populations at that time may have translated into higher site numbers because of frequent moves within a specified territory that included the Blue Ridge environs.

RIDGE AND VALLEY PROVINCE

Site frequency, density, and distribution are similar to that of the Blue Ridge province (Figures 25-27, 29, 30, 32, and 34). The exception is the Middle Archaic evidence, which suggests that the region was utilized less often and to a lesser degree than it was during the Early and Late Archaic. This also counters the trend evident in the Piedmont data.

If this reflects actual conditions, two explanations for this phenomenon are offered. The first is that this area was a frontier between Morrow Mountain phase territory and the area exploited by people associated with Sykes/White Springs and Benton hafted bifaces. As discussed in Chapter V, it is possible that Morrow Mountain phase groups actively resisted the intrusion of these people, possibly until the end of the Middle Archaic period. If so, this region may have not been used to a great extent by either culture, as it formed a geographical frontier between the two groups. Although this province harbors significant chert formations of moderate to high quality, and earlier as well as later groups utilized these resources to their full potential, the relative scarcity of Ridge and Valley chert Morrow Mountain hafted bifaces in north Georgia, and the paucity of Ridge and Valley chert from Morrow Mountain contexts in general, suggests that Morrow Mountian people did not control the region and its resources.

Ridge and Valley chert occurs in Sykes/White Springs and Benton components more often, and to a larger extent, but it does not dominate assemblages, and that material is abundantly available in their "homeland." Therefore, there is no conclusive evidence that they controlled the Georgia Ridge and Valley lithic sources either. This intriguing aspect of Middle Archaic political and social behavior deserves to be investigated further.

A second explanation is related to climate. As discussed in Chapters II and V, there is considerable debate with regard to the nature of the Middle Holocene environment of north Georgia. Some researchers believe the southern Appalachians and the northern Coastal Plain were warmer and wetter than areas to the north and west (Delcourt and Delcourt 1985:20; Leigh 1998; Leigh and Feeney 1995). The dryer conditions in those areas are thought to have reduced biotic productivity, especially in the uplands. Therefore, these areas were, for the most part, avoided by the prehistoric inhabitants. In the wetter areas, however, the biotic resource structure is thought to have been fairly diverse and productive.

Given this information, it is possible that the Georgia section of the Ridge and Valley province was at or near the interface of the two systems responsible for this variation in climatic conditions. Once again, additional research directed at this problem would be a valuable endeavor.

PIEDMONT PROVINCE

The site file data indicate that the Piedmont was the most intensively occupied of north Georgia during each of the three Archaic subperiods (see Figures 25-27, 31, 33, 35).

Based on topography, hydrology, and resource structure, that data appears to be correct since the Piedmont is more suited for human habitation and exploitation; that presumption needs critical attention, however, and the information should be viewed with the following in mind.

As stated previously, this province has received the most scrutiny. Modern populations are concentrated in the Piedmont, and CRM investigations have occurred in disproportionate numbers because more property has been developed. In addition to land-based construction, the construction or proposed construction of large reservoirs within the region have added to the discrepancy in archaeological coverage.

The increased attention is an obvious point of bias, as is the environmental context of artifact finds. In the Piedmont, erosion caused by intensive and extensive agriculture during the late nineteenth and early twentieth century has removed large portions of the soil column, resulting in eroded and deflated soil profiles that contain conflated cultural horizons. This has made the archaeological record more visible, and survey efforts based on surface examinations more productive. These concerns primarily relate to the number of sites encountered; they do not significantly affect proportional relationships, however.

There is a marked increase in site density between the Early and Middle Archaic periods. Although the regional population likely increased to some extent, this situation is probably due to differences in settlement preferences and subsistence practices more than it does population increase. Middle Archaic groups were much more mobile and, therefore, more sites were created. In addition, Middle Archaic groups used the uplands more extensively, where the soil has been eroded to a larger extent, thus making the artifacts more visible.

Finally, site density declines for the Late Archaic period, but only slightly. This may be related to the reservoir bias discussed above. Late Archaic groups tended to live in larger, more permanent settings along major and moderate-sized drainages. Seasonal and short-term sites were established in the uplands, but those areas were not used to the extent that they were during the Middle Archaic (see Figures 33 and 35). Since their preferred exploitation zone coincides with preferred reservoir locations, it is probable that more Late Archaic sites have been discovered than they would have by random chance.

VIII. RESEARCH QUESTIONS AND RECOMMENDATIONS

Hopefully, the previous chapters have provided a comprehensive, integrated perspective on the archaeology of north Georgia. Most of the research design questions presented below have been discussed and addressed within the context of those chapters. Recommendations concerning future research and potential improvements in methodology and data management have also been integrated into those discussions when appropriate.

The following is a specific response to the 14 research questions that guide all of the papers in this research design series.

RESEARCH QUESTIONS

1. What are the cultural resources and their condition?

The GASF currently has 19,337 archaeological sites recorded for the four physiographic provinces within the scope of this study. Approximately one-fourth (27.4 percent; n= 5,303) contain Archaic period components. Early Archaic sites constitute 20.6 percent (n= 862) of the components that have been identified by subperiod, Middle Archaic sites comprise 43.6 percent (n= 1,822), and Late Archaic components account for the remaining 35.8 percent (n= 1,496). A total of 1,123 unspecified Archaic sites are also listed in the GASF.

In terms of site function, it is very difficult to determine the number and distribution of site types—village, base camp, hunting camp, work station, for example—that are associated with the recorded Archaic period occupations in northern Georgia. One of the problems is attributable to the way in which the data is organized and accessed at the GASF. Obtaining this information requires multilevel inquiries of the database that are based on geographical, temporal, and functional data. It is exceedingly difficult (if not impossible) and time consuming to gather this information with the resources that are currently available at the GASF. This situation emphasizes the need to re-organize the data in a more useful fashion, and to make the GASF's GIS capabilities widely available to interested researchers (see Chapter VII).

Additional problems with enumerating site types by culture period include the level of effort conducted at recorded sites, and the diligence paid by archaeologists to the nature of individual occupations at multicomponent sites, which constitute the large majority of known Archaic period occupations.

Most sites recorded in the state site file have received only negligible attention—recorded as surface finds, for example—or have not been investigated beyond the survey level. In these cases, determination of site function cannot be made with any degree of confidence. At the testing and data recovery levels of study, problems arise at multicomponent sites when individual components cannot be isolated. Even in cases where some or all of the components can be distinguished, site forms often do not reference site function by individual component.

In general terms, and with the probable exception of permanently occupied villages, all classes of site types are associated with Early, Middle, and Late Archaic occupations, even as subsistence strategies fluctuated between forager and collector-based hunting and gathering. Floodplains and first terraces were used for larger and more permanent settlements. Aggregation episodes, seasonal encampments, and base camps are known to have occurred on these physiographic features during all three periods. These landforms also harbor smaller, more specialized occupations that were shorter in duration and focused on one, or perhaps a few, specialized activities.

Uplands were extensively utilized throughout the Archaic as well. These locations primarily served as seasonal—fall and winter—exploitation zones during the Early Archaic and most of the Late Archaic period. During the Middle Archaic, the uplands were apparently included in foraging zones that were chosen or abandoned according to resource structure and availability rather than seasonal schedule. This land-use pattern translates to an increased number of upland sites. Many of these locations are generally larger than upland occupations of earlier and later times, and they exhibit a generalized artifact inventory that reflects the foraging nature of their subsistence strategy.

Relatively permanent use of the uplands also occurred in the central portion of the Georgia Piedmont during the Mill Branch phase of the Late Archaic period. These groups are thought to have moved or been forced out of the Piedmont and Fall Zone regions of the Savannah River catchment by groups associated with Stallings culture (Lovers Lane Phase). Sites containing Mill Branch Phase components are especially numerous in the uplands of the Piedmont Oconee and Upper Ocmulgee river regions.

All Archaic period groups utilized a wide range of natural resources occurring in a variety of physical settings. Archaeological remains associated with their behavior in these settings occur in most areas of north Georgia, in both expected and unexpected locations. That material can provide insightful archaeological and anthropological data that must be viewed beyond the site level to reach its full information potential. Therefore, it is essential that, when the opportunity arises, all landform types and ecological settings receive archaeological attention. Further, analyses should extend beyond site-specific issues into the realm of catchment and regional studies whenever feasible.

Unfortunately, most areas of the north Georgia, especially the Piedmont province, have been subjected to severe erosion due to poor land management during the nineteenth and twentieth centuries. Cotton agriculture, as practiced until the 1930's has had a damaging effect, but constant development and widespread clear-cutting are equally responsible for the eroded nature of both floodplain and non-floodplain environments. These detrimental effects have conflated archaeological components and diminished or eliminated the contextual integrity of countless archaeological sites. Sites containing stratigraphically intact archaeological remains are primarily limited to alluvial settings where deposition rates exceed erosional factors.

Despite this unfortunate situation, intact single component and stratified sites occasionally occur in non-alluvial settings that have escaped the effects of erosion, or where the original soil column has buried artifacts deep enough to absorb erosional forces without exposing the remains.

Therefore, sites with plow zones and/or other apparently disturbed surfaces should not be written off without a proper subsurface assessment.

2. What are the locations and distribution of these resources?

Site distributions are discussed in Chapter VII; site locations and land-use patterns are detailed in Chapters IV-VI and reviewed in Research Question 1. In summary, the number of Middle Archaic sites is approximately double that of the Early Archaic. Population increase, and to a greater extent, shifts in settlement and subsistence, are offered as explanations for this phenomenon.

Late Archaic site density is lower than the Middle Archaic, but not as much as expected given the differences in settlement organization. This situation is probably caused by a sampling bias as several large archaeology projects associated with reservoir construction have been conducted in areas preferred by Late Archaic populations.

The Piedmont was the most intensively utilized province, according to the GASF data. Archaic period groups utilized the Ridge and Valley and Blue Ridge province to approximately the same degree. A total of 36 Archaic period sites are recorded for the 40-km^2 Appalachian Plateau province of extreme northwestern Georgia. This translates into a disproportionately high site density that is a result of the province's limited size.

3. What was the approximate original density of the resources and how many have been destroyed or disturbed?

Issues involving land-use practices, settlement, and population densities are discussed in Chapters IV-VI. Obviously, the number of known sites does not approach the actual number of sites that are or were present, since only a small percentage of sites have been discovered and reported. Therefore, estimations of original site densities are rather speculative.

The site file data suggest site densities range from 0.033 sites per square kilometer for the Early Archaic period, 0.069 sites for the Middle Archaic, and 0.057 for the Late Archaic. Survey data from several areas of the state suggest that actual densities are likely to be an order of magnitude larger. This places the density at 0.33, 0.69, and 0.57 sites per square kilometer, respectively. In the Wallace Reservoir, Early Archaic sites occur at a density of 0.38- km^2, which is very close to the extrapolation of the site file data. Although this tends to support the estimated figures, they cannot be independently corroborated with the data that is currently available.

Finally, it is likely that significant numbers of unidentified Archaic period sites remain in northern Georgia. Many are likely to yield important archaeological information. Therefore, archaeologists, historic preservationists, and the general public as well, must be stewards over these valuable non-renewable resources. This can best be accomplished by discouraging development in areas likely to contain these resources. Failing that, measures must be taken to ensure that sites occurring within construction zones are identified and properly assessed whenever possible. Existing laws and regulations in this regard are adequate when properly enforced, but construction that does not fall under the jurisdiction of federal or state permits often destroys sites with impunity. Public awareness of this problem is essential if we are to bolster existing laws and persuade developers, contractors, designers, planners, architects, and others to help protect our cultural resources by following federal and state guidelines regardless of jurisdictional matters.

In terms of mitigation, planners should be encouraged to preserve sites in place within the construction zone when significant sites are identified in those locations and cannot be avoided. Data recovery investigations should be used as a last resort in the universe of mitigative alternatives so that the archaeological record is preserved for the future.

4. What previous investigations have been conducted in the study unit and what are their biases?

Many of the more significant archaeological projects in north Georgia are described and cited throughout the previous chapters; most are CRM studies conducted over the last 25 years. The results of large reservoir surveys in particular have helped to determine the geographical range of particular cultural traditions, settlement organization, raw material utilization, and possible exchange networks. In cases where Phase II and III excavations were conducted, additional data were obtained concerning subsistence, seasonality, technological organization, intra-site variation and site function. This was accomplished to varying degrees of success.

Information concerning upland and inter-riverine environments has primarily been obtained from Forest Service projects within National Forests, pipeline and transmission line projects, and public and private development.

The biases inherent in these projects have been discussed in Chapter VII. To summarize, the large reservoir surveys are focused in areas where prehistoric groups, especially Late Archaic people, preferred to live. Therefore, site densities for the region are inflated for that era. Also, the uplands and inter-riverine environments have been severely eroded, and cultural material is more visible because it appears on the surface in many areas. This translates to increased site identification, especially as it relates to the Middle Archaic period, when these environs were used more extensively.

Two major figures in the history of north Georgia archaeology are Robert Wauchope and Joseph B. Caldwell. Any comprehensive study of this subject, despite the research focus, is not complete without mentioning their contributions.

Robert Wauchope conducted a survey of 40 counties in north Georgia between 1938 and 1940; the results were published in 1966 as *Archaeological Survey of North Georgia with a Test of Some Cultural Hypotheses*. This volume is still a valuable resource for researchers working in the region. However, the primary focus is on ceramic traditions and sites with ceramic-bearing components. Lithic assemblages, including most hafted biface types, are described in the generic, and artifact frequencies by site are not given. Therefore, the utility of this work is minimal in terms of current Archaic period research issues.

During the late 1940's and early 1950's, Joseph Caldwell conducted several surveys in major reservoir basins throughout north Georgia. These reservoirs include Allatoona, Clarks Hill (Thurmond), Hartwell, and Buford (Lanier). The specific results of his work are contained in unpublished documents that do not have a wide circulation (Caldwell 1951, 1957; Elliott 1995). In addition, there is very little information on Archaic period sites because cultural sequences were in development at that time, and there was no consensus with regard to typology. Also, that work was conducted and reported in an era of trait lists and an emphasis on ceramics. Very little attention was paid to artifact frequencies, especially as it related to pure lithic assemblages. Therefore, Caldwell's survey data are not particularly useful to Archaic period research. In terms of prehistoric ceramics, however, his work helped name and define many of the traditions recognized today

Caldwell's work in north Georgia also has considerable historical value, as it was manifest in his well-known publication *Trend and Tradition in the Prehistory of the United States*. Published in 1958, that volume introduced the concept of "Primary Forest Efficiency," which helped usher in the age of ecological archaeology and the tenets of processualism (see Steward 1955; White 1959).

5. What are the archaeological phases represented in the study units and what are their components?

These issues are addressed in Chapters IV-VI. Considerable attention has been paid to the Late Archaic sequence along the Savannah River from the Piedmont to the Coastal Zone, and its applicability to the rest of north Georgia.

To summarize, the Early Archaic period has been subdivided according to technochronological details associated with hafted biface morphology. At this time, there are insufficient data to identify specific phases and cultures within that era.

In north Georgia, Middle Archaic developments are primarily associated with the Morrow Mountain phase. People that produced these hafted biface types may have resisted the intrusion of Sykes/White Springs and Benton culture until the end of the period.

The Late Archaic period of the Savannah River region has been subdivided into five temporally distinct phases/complexes; each is discussed in Chapter VI. Two of those phases, Mill Branch and Stallings, have been recognized elsewhere in the region. They are expressed in the archaeological record of the southern Piedmont province in the Oconee and upper Ocmulgee drainage systems. The other three manifestations appear to be localized phenomena that are exclusively associated with the Savannah River Piedmont and Fall Zone.

6. What are the distinctive environments represented within the study unit?

The current and Archaic period environments of northern Georgia are described and discussed in Chapter II. The following is a summary of the data presented in that chapter.

The region consists of four major geological features that include portions of the Appalachian Plateau, Blue Ridge, Piedmont, and Ridge and Valley physiographic provinces. The Piedmont is characterized by rolling topography with moderate relief. Hills are bisected by drainages of varying sizes; some of the narrower valleys are fairly steep. The three remaining provinces are fairly rugged, and are drained by small to moderate streams, creeks, and rivers.

The Ridge and Valley is the only province that contains appreciable quantities of moderate-to-high quality chert, an important raw material for Archaic period populations. Quartz, which was also a significant source of lithic material, is readily available in many areas of the Blue Ridge and Piedmont provinces. Higher quality quartz was an important lithic source for groups visiting and inhabiting these regions, and it served to augment and/or replace the supply of chert originating from the Ridge and Valley and Coastal Plain that was earmarked for chipped stone tool manufacture.

Eight major river systems occur within the state's boundaries, and all but one river—the Savannah—originate in northern Georgia (see Figure 3). The Savannah River has its origins in the Blue Ridge province of Georgia (Tugaloo River) and the Piedmont province of South Carolina (Seneca River). These eight river systems formed a complex network of waterways that were not only a supply of fresh water, but served as conduits for travel, trade, and information exchange as well.

In terms of biotic resources, all four provinces contained a wide variety of flora and fauna exploited by the Archaic period residents. With the exception of a few species adapted to very localized conditions, the ecology of the region was fairly uniform during the Archaic period. Most animals present today also inhabited northern Georgia at that time, some of the more important include white-tailed deer, bear, fox, turkey, migratory waterfowl, and a variety of amphibians, reptiles, and fish. Important animals that are no longer present include bison, elk, cougar, and wolf.

By Early Archaic times, the transition from parkland and spruce/pine boreal forest to a canopy that was dominated by oak, hickory, and other hardwoods was essentially complete. These hardwood forests continued to thrive throughout the Archaic period north of the Fall Zone. During the Middle Archaic, the climate appears to have become warmer and wetter, although there is still considerable debate about precipitation patterns during that period. Some researchers believe the climate of northern Georgia was drier during seasons that were relatively wet in Early and Late Archaic times. This is thought to have caused the uplands to become dominated by pine forests, and rendered relatively low in biological productivity. Chapters II, V, and VII explore this issue in more detail. In any case, at the advent of the Late Archaic period, broad-scale climatic conditions began to approach those that exist today.

7. What is the nature of cultural adaptation within the study unit?

A detailed analysis of this subject is provided in Chapters IV-VI, with the following caveat. Settlement, subsistence, and technological strategies are discussed in terms of human decision-making within particular environmental parameters. The approach, however, is derived from the position that human agency is responsible for social conditions, and that decision-making is based on historical conditions that are both social and physical. Since "adaptation" tacitly implies that environmental conditions have a greater influence over behavior than do social and historical processes, the term is avoided in the text.

Archaic period inhabitants of north Georgia utilized the available resources in a variety of ways. They exploited the biota for sustenance, tools, clothing, shelter, and medicine. The non-organic resources, rocks and minerals for example, were also important. They provided raw material for tool manufacture, ceremonial and decorative display items, exchange goods, and symbols of achievement and power. All of this was accomplished within an organizational framework based on hunting, fishing, and gathering.

Early Archaic populations adjusted to new environmental conditions that had begun to stabilize by 8000 B.P. Land-use and settlement organization alternated between foraging and collecting modes, depending on the time of year, raw material needs, and social obligations.

During the Middle Archaic period, people adopted a more flexible mode of subsistence and social organization that was maintained by expedient technology and frequent residential moves.

In some areas, especially in the Savannah River region, Late Archaic populations began to coalesce. Political and social struggles are associated with this phenomenon, and there appears to have been at least two periods of population dispersal. As groups became disenfranchised with the power structure, particularly those associated with the Mill Branch and possibly Stallings culture, they moved north and west into the upland environments of the Piedmont.

Evidence of occupations during both phases has been discovered in the upper Savannah, Piedmont Oconee, and upper Ocmulgee river regions. These phases are not expressed further west, however, where the nature of the Late Archaic cultural sequence remains unclear.

During the final few centuries of the Late Archaic, the soapstone industry shifted from the localized manufacture and control of perforated cooking slabs along the central Savannah River to a pan-regional system of soapstone bowl production and exchange.

Ceramic technology had been adopted throughout the region by the end of the period. The sand and grit tempered wares produced during that time were more durable than the fiber-tempered pottery that was produced on the coast and inner Coastal Plain by approximately 4500 B.P.

8. What information is required to more fully understand the nature of this adaptation?

There are several self-evident needs that can, for the most part, only be met with providence. These include more radiocarbon dates from secure contexts, additional subsistence data, feature evidence that relates to site function and site structure, and forensic data. This information is almost invariably obtained during testing and data recovery. Barring the few focused research projects that are associated with academic pursuits, these investigations are conducted under the purview of CRM projects whose location and archaeological focus are decided by non-archaeological interests.

A projectile point typology that has consensus is sorely needed, perhaps in the form of a monograph that makes a comprehensive and critical study of Southeastern projectile point morphology and terminology. The recent publication of a projectile point guide in Early Georgia (Whatley 2002) is step in the right direction.

However, parochial terminology still prevails throughout the region; multiple, and sometimes several, names are attached to hafted biface types that exhibit identical morphological attributes. These differences are primarily associated with the location of their discovery, but these terms are often also applied according to the designation most familiar to the archaeologist. In some cases, this occurs despite the place of the artifact's origin. This often leads to confusion and a misrepresentation of the data, especially when it is applied in comparative and synthetic studies.

In the same vein, more attention should be placed on Middle Archaic site identification. Sites and components are often classified as Middle Archaic, usually Morrow Mountain, solely because a quartz artifact scatter is present. Many contain bifaces and non-descript ovates, but diagnostics are lacking. Middle Archaic sites should only be designated as such if diagnostics are present.

With final regard to this subject, Guilford technology appears to be a localized phenomenon of the Carolina Piedmont. Lanceolate bifaces found in north Georgia, particularly those manufactured from quartz, should be classified as Guilfords with caution. Only those forms that exhibit the classic rounded or slightly indented base, and the relatively well-made and well-formed lateral margins should be considered as Guilford.

In terms of reporting, specific information concerning site components, diagnostic frequencies, artifact densities, and other types of important data are often buried in the text or presented in appendices without a proper synthesis. Reviewing agencies should require that a synthesis chapter encompassing both local and regional developments be presented in all archaeological reports, including those associated with Phase I surveys.

As discussed in Research Question 1 and in Chapter VII, the GASF should make the GIS data more accessible; the ability to process and manipulate that information should also be made available to interested and qualified researchers. Information concerning the relationships and inter-relationships between topography, hydrology, resource structure, and human behavior is essential in many aspects of anthropological and archaeological inquiry.

The accumulation, processing, analysis, and reporting of data should not be the only, or even primary, goal of archaeological endeavors. The ultimate goal of archaeological inquiry is to acquire insight into the nature of human social relations and the way in which they structure the societies in which people live. To achieve that end, it is necessary to present and interpret our data according to social theoretical principles derived from recent anthropological and sociological discourse. These pursuits should not be left solely for academic papers, journal articles, and books, however.

Technical reports generated from Cultural Resource Management (CRM) studies should place more emphasis on interpretation and social theoretical concerns. These products can be much more useful to the archaeological and anthropological community if they are grounded in current theory, whether it is derived from agent-based, historical, evolutionary, or ecological anthropology. Regardless of one's perspective, this added dimension to CRM reports would significantly enhance their utility by generating useful debate, and ultimately leading to new lines of archaeological inquiry.

9. What type of investigation and what specific research problems are required to gather this needed information?

Phase I surveys are the most common type of archaeological investigation. They occur throughout the state, and since the project area is dictated by non-archaeological interests, surveys are conducted within a variety of environmental settings. When integrated, the data obtained during these projects provides a powerful tool for addressing such issues as settlement, demography, interaction, and exchange on subregional and regional scales. The site files are intended for just such a purpose, and offer a mechanism to investigate these issues. The improvements suggested in Chapter VII, however, would dramatically enhance this capability.

There are several pressing research problems for north Georgia. One goal should be an attempt to identify Early Archaic "homelands", and the nature of interaction between these areas. The data presented in Chapter IV suggest that this would be an interesting and productive pursuit that could be accomplished by research focused on hafted biface morphology and raw material distributions.

The Morrow Mountain phase appears to have persisted in north Georgia in resistance to the changes taking place to the north and west. Chapter V discusses this issue at length. Additional absolute dates from both within and outside the study area will be necessary for this issue to be resolved. Closer attention to typology and site identification will also be required. A detailed comparative synthesis of the Middle Archaic period devoted to the topic of dominance and resistance in the Southeast would be a worthwhile endeavor.

A great deal has been learned about the Late Archaic period, as evidenced in Chapter VI. A complex/phase cultural sequence has been developed for the central and upper Savannah River region that has relevance to areas west and north of that area. This work has shown how high-resolution data can be used to create histories, and provide a gateway to the domain of anthropological, sociological, and historical discourse.

An effort should be made to construct the cultural sequence for the northern and western portions of north Georgia, where Late Archaic data is badly needed. Once that is accomplished and integrated with the eastern sequence, we can begin to construct the Late Archaic history of the entire north Georgia region.

The latter paragraphs in the response to Research Question 8 discuss the need to present our data in a meaningful and productive manner that is consistent with the principles and goals of social theory. The opinions expressed in those paragraphs are reiterated here. It is essential that the proposed research objectives discussed above be grounded in sound theoretical principles, and the results applied towards resolving current anthropological and social theoretical issues.

10. What types of resources in the study unit should be considered significant and why?

All sites with intact cultural horizons containing diagnostic artifacts should be considered significant because they harbor information concerning the behavior of discrete social units within a specific physical setting. This is the highest level of resolution obtainable in terms of the prehistoric archaeological record. Sites of this nature should be preserved in place if at all possible. If that isn't feasible, data recovery investigations should be conducted to mitigate any adverse effect that endangers the cultural resource. These investigations should address current archaeological and anthropological issues, including those discussed in this manuscript series, and adhere to a well-planned and focused research design.

These criteria should also be applied to stratified/intact sites that apparently lack diagnostic evidence. Phase I and II investigations rarely sample more than a tiny fraction of a site (< 1.0 percent?). Therefore the absence of diagnostics in recovered assemblages does not translate to the absence of diagnostics in general. If excavation coverage is relatively extensive (> 20.0 percent?), it is very likely that diagnostic artifacts will be discovered during data recovery.

Even when diagnostic hafted bifaces and ceramics are absent from data recovery assemblages, components can sometimes be identified by the use of specific raw materials and non-hafted-biface artifacts—soapstone bowls, perforated slabs, and grooved axes, for example. Although slightly more tenuous, this can be accomplished by constructing bridging arguments that illustrate the temporal placement of these items at other sites where diagnostics and/or radiocarbon dates have been obtained.

In terms of plow zone sites, a great deal of information can be gained by looking at horizontal artifact distributions, even when the site is multicomponent. Components can often be spatially isolated on the basis of diagnostic and raw material distributions. Once that is accomplished, artifact concentrations and specialized activity areas related to specific occupations may be discernable. Sites of this nature are also significant and warrant protection.

Even in cases where specific components cannot be isolated at plow zone sites; they may be significant if large numbers of diagnostic specimens are present. These sites are a valuable source of data for morphological, typological, and stylistic studies. An effort should be made to identify and protect this site type whenever possible.

11. What kind of sample of the resource base should be physically preserved and why?

Large floodplain and first terrace sites are obviously worthy of preservation because, in general, they contain the larger and more intensively occupied sites. It is also very important, however, that smaller more ephemeral sites are not overlooked or treated with less vigor. Evidence from the smaller sites help to integrate our view of settlement, susbsistence, and demography. Without that information, data collected from the more substantial sites would be incomplete and sometimes misleading.

Archaeological sites are a non-renewable resource, and ideally, an effort should be made to preserve all of our cultural resources. Concepts of site redundancy and site prioritizing on the basis of information type, culture period, and other requisites approach dangerous territory, as we know from experience when attempting to incorporate decades-old databases into modern research concepts. At least a portion of the data that seems redundant or superfluous today, will no doubt be essential, or at least important, to future archaeologists.

In practical terms, we can only legally protect those cultural resources—regardless of age, function, or physical setting—that fall within the government's jurisdiction. This includes sites occurring on federally or state owned properties, as well as sites that are situated on properties involved in certain permitting issues. We can also actively pursue avenues that educate the public about the rampant, often unregulated, but still legal, construction that is wreaking havoc on our cultural heritage.

Privately owned archaeological sites are already being protected. Recognizing their mutual concerns, organizations such as The Archaeological Conservancy, The Nature Conservancy, Riverkeepers, the Society for Georgia Archaeology, and the Georgia Council of Professional Archaeologists are working together in an effort to identify, buy, and protect sensitive natural and cultural resource areas. Hopefully these alliances will expand to include other groups, and the number of protected sites will continue to grow.

12. What are the predicted locations of unidentified cultural resources, based upon locations of known resources, and what degree of confidence can be placed in these predictions?

The site file data greatly underrepresents the number of Archaic period sites in north Georgia, and it is also heavily biased towards sites located in riverine settings and eroded uplands. The intervening areas have not received the same archaeological scrutiny, or do not exhibit the surface visibility attended to riverine and upland settings in north Georgia.

Therefore, it is not possible to statistically or observationally extrapolate from the database and confidently predict where unknown sites are located on a regional scale. The general rule of "if you would choose to live there or camp there, so would have others" applies as well as any other method of prediction at this stage. Relatively flat areas that are close to fresh water and exhibit fairly well-drained soils are likely candidates for archaeological sites.

Agreeing with Elliott and Sassaman (1995: 166), statistically valid predictions of site locations on the basis of distance to water, soil type, and other variables can possibly be done on the project level of analysis. Such studies have been, and are being, done in the context of military base preservation plans.

13. What land-use activities have disturbed and continue to threaten the resource base?

Unfortunately, many areas of north Georgia have been targeted for commercial and residential development in an unprecedented fashion. An unknown number of archaeological sites have been totally obliterated by this activity, and the contextual integrity of many more has been completely compromised. Pipeline and transmission line construction and maintenance has also had a negative effect on Georgia's cultural resources.

Clear-cutting and other poor land-management practices have considerably increased the rate of erosion, and many upland areas are deflated to subsoil. Rivers and stream banks are often overloaded with runoff that scours the banks and destroys valuable archaeological information.

Looters have always been a destructive force. An anti-looting task force has recently been implemented through the co-operation of the Georgia Department of Natural Resources, Georgia Bureau of Investigation, the Georgia Council of Professional Archaeologists, and the Society for Georgia Archaeology. Hopefully this co-operative effort will help to identify and eventually prosecute looters. It is also intended to send a clear message that looting will not be tolerated.

14. What land-use activities are compatible with the resource base?

Although the picture painted in response to Question 13 is dim, many land-use activities are compatible with the resource base. The introduction of no-till farming will be particularly helpful in site preservation. Although discing and deep plowing methods do not significantly affect plow zone artifacts in terms of horizontal distributions, the constant erosion and deflation of surfaces makes each year's plowing cut deeper into the archaeological record. As the term implies, no-till does not loosen the topsoil and it keeps erosion to a minimum.

Similar methods are being used in the silvicuture industry. While harrowing—a method that cuts deep trenches into the soil—is still widely practiced; a much less destructive method known as shearing and raking is being used in upland settings. This method only disturbs the upper 5-10 cm of soil, reducing the amount of site disturbance and lessening the effect of erosion.

In the timber industry, there has been a recent move towards selective harvesting in lieu of clear-cutting. This has reduced erosion, but the need for trails, roads, fire breaks, and loading areas continues to negatively impact our cultural resources.

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