AN ARCHAEOLOGICAL SURVEY OF PORTIONS OF ORANGE COUNTY, NORTH CAROLINA

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ABSTRACT

During the winter of 1993-1994, the Research Laboratories of Anthropology, University of North Carolina at Chapel Hill, conducted an archaeological survey of portions of Orange County, North Carolina. A total of 151 sites were recorded during this survey. The results of this fieldwork were used in conjunction with previously existing site data to generate a preliminary model to aid in predicting the distribution of archaeological resources in Orange County. This project was part of the county's ongoing efforts to identify and assess its archaeological and historical resources as part of its comprehensive planning program.

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The fieldwork and report preparation were completed with the logistical support of the staff and students of UNC Research Laboratories of Anthropology. Vin Steponaitis and Trawick Ward guided the implementation of the survey strategy. Vin and Trawick also read and commented on an earlier draft of this report. Laurie Steponaitis, who had conducted a similar study in Maryland, offered particularly helpful advice concerning several aspects of our fieldwork. Fieldwork was carried out with the assistance of Joe Herbert and Bryan Anderson. Joe also produced the maps for this report while Bryan completed site forms and cataloged artifacts. Steve Davis and Trisha Samford answered questions concerning pottery identification, while Tom Hargrove shared his knowledge concerning historic dams in Orange County. Steve Davis and Tom Maher's assistance in digital photography is largely responsible for the photographs reproduced here. Estella Stansbury provided secretarial support. Finally, the generous cooperation of all the land owners and tenants who allowed us to walk their fields is gratefully acknowledged.

CONTENTS

Chapter 1

INTRODUCTION

This report presents the results of an archaeological survey of portions of Orange County performed by the Research Laboratories of Anthropology, University of North Carolina at Chapel Hill. The survey was conducted using a Survey and Planning Grant sponsored by the National Park Service of the U.S. Department of the Interior and Orange County. The project was as administered by the North Carolina Division of Archives and History. It is part of Orange County's ongoing efforts to identify and assess the county's archaeological and historical resources as part of its comprehensive planning program.

REPORT OVERVIEW

The report is divided into the following sections. This chapter describes the environmental context of the county as it relates to past human settlement. Chapter 2 provides a summary of the archaeology of Orange County. An overview of the prehistory and history of the county is presented and is placed within a regional context of what is known concerning the archaeology of the Piedmont. Chapter 3 describes what areas within the county were selected for survey, how those areas were chosen, and the field methods used.

The classification of the recovered artifacts is presented in Chapter 4. Although the classification scheme is largely cultural-historical, tool functions are also discussed. Chapter 5 presents the survey results. A total of 151 sites were recorded during the survey, and they are summarized based upon artifact density and cultural-historic period; the significance of these sites is also evaluated with respect to the National Register of Historic Places criteria. A discussion of the spatial patterning recovered during the survey is presented discussing potential differences in temporal and functional land patterns.

Finally, Chapter 6 summarizes site file data for Orange County, noting patterns relevant to site distributions. The data are used in conjunction with information gathered during the fieldwork phase of the project to generate a preliminary model to aid in predicting the distribution of archaeological resources in Orange County.

ENVIRONMENTAL CONTEXT

It is little more than an anthropological truism to state that much of past human settlement was influenced by the natural environment. Nevertheless, any study of past cultural systems must consider land use in relationship to the distribution of natural resources. And while much of the modern environment of the study area represents an altered ecosystem compared to aboriginal conditions, it is still possible, if not necessary, to refer to the modern environment to provide some basis for discussing the recent historic environment. In addition, because much human occupation took place in the wake of post-Pleistocene environmental change, evidence for environmental conditions dating in the more distant past is also summarized. Thus, in the following review, certain aspects of the environment are considered that are presumed to have some relevance for human settlement in Orange County.

Physiography

Orange County, covering an area of 1031 sq km (2670 sq miles), is located in the physiographic province known as the Piedmont (Figure 1.1). As such, the topography is typical for the region with gently rolling hills drained by small streams with V-shaped valleys. Elevation ranges from about 210-240 m (700-800 ft) above mean sea level in the northern part of the county to about 61 m (200 ft) in the extreme southeast corner of the county (Allen and Wilson 1968:4).

No large watercourses traverse the county. Rather, low-energy streams with narrow floodplains characterize the area. These streams serve as the headwaters for three major river systems in the state: the Neuse, Cape Fear, and to a lesser extent the Tar.

Most of northern Orange County lies in the Neuse River basin which includes the north and south forks of the Little River, the Eno River, and their tributaries. These drainages flow easterly and eventually unite in Durham County to form the Neuse. The southern and western border of Orange County are part of the Cape Fear River basin. New Hope Creek, Bolin Creek, and Morgan Creek drain the southeastern portion of the county; they eventually merge into the New Hope River which drains into the Cape Fear by way of the Haw River in Chatham County. Back Creek, Cane Creek, and Collins Creek drain the western portion of the county. These creeks also empty into the Haw River, a small segment of which, forms the extreme southeastern corner of Orange County. The very northeastern border of the County is part of the Roanoke River basin and contains the headwaters of North Hyco Creek and South Hyco Creek. These two creeks drain to the north into Caswell and Person County.

Geology

Geologically, Orange County lies on the eastern edge of the Carolina Slate Belt which is made up of metavolcanic and metasedimentary rocks extending approximately 600 km from Virginia to Georgia; it has a maximum width of about 140 km in central North Carolina (Butler and Secor 1991:66). Many of the rock types mapped in Orange County are both lithologically and chemically similar to those areas of the Carolina Slate Belt outside the county. Although there is some question to the exact stratigraphic relationships of the various lithologic units, the bedrock geology of Orange County can be generally divided into three types: metavolcanic-metasedimentary rocks, intrusive igneous rocks, and lesser amounts of sedimentary rocks (Allen and Wilson 1968).

Metavolcanic and metasedimentary rocks, tentatively believed to be Ordovician in age, dominate the area and extend in a broad northeast trending belt across the central portion of the county. The weathering, stream action, and attitude of these rocks have resulted in a series of undulating ridges dissected by a series of southeast flowing streams. Intrusive into these rocks are igneous plutonic rocks, perhaps of the Devonian age. These intrusive rocks apparently penetrated weak sections of the older metavolcanic rocks along fault and fracture zones. These rock types are located primarily in the northwestern and southeastern sections of the county and form dome-shaped hills with steep slopes usually occurring on their eastern flanks. Sedimentary rocks of Triassic age occur in the extreme southeastern corner of Orange County, occupying a downfaulted area known as the Durham Basin. This unit forms a low lying undulating to gently rolling topography and is a small portion of the great northeast trending Deep River Basin (Allen and Wilson 1968).

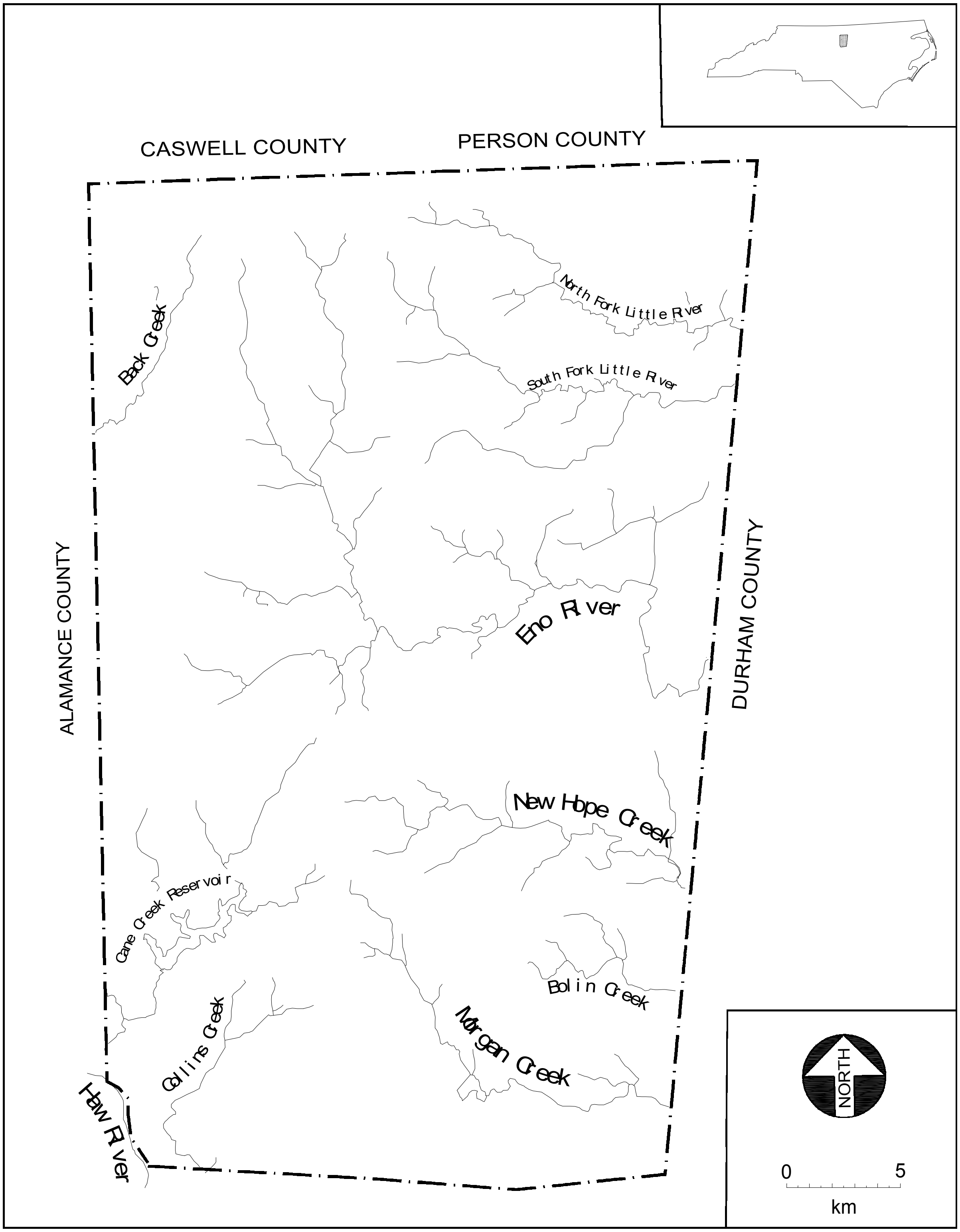

Figure 1.1. Orange County drainages.

Of particular relevance to this geological discussion, is the potential use of local metavolcanic stone types as raw material for the manufacture of chipped-stone tools. While no prehistoric stone quarries are recorded for the county, one small welded-tuff quarry is known in northeast Chatham County, just south of the Orange County line (Daniel and Butler 1994). Similar quarries may have been destroyed by modern construction or remain as yet undiscovered; however, it seems unlikely that any large quarries, such as those in the Uwharrie Mountains of Montgomery and Stanly counties, ever existed in Orange County (Daniel and Butler 1991; 1994). Instead of being used to make chipped-stone tools, local metavolcanic stone was more likely used in cobble form for hammerstones and anvils (Daniel 1988:83), or ground to make celts (Tippitt and Daniel 1987:226).

Some nonmetavolcanic stone such as quartz was also used prehistorically and may have been acquired locally (Daniel 1988:80). Quartz cobbles, which were commonly used as hammerstones, were almost certainly procured from local streams (Daniel 1988:83). Although of highly variable quality, quartz is widespread throughout the Piedmont and occurs in exposed beds and veins. One small outcrop that was used as a raw material source has been recorded in eastern Orange County (McCabe et al. 1978).

Finally, local stone outcrops also were used historically, perhaps to a greater extent than prehistorically, since rocks were needed as to form the foundations for virtually every 18th and 19th century structure built in the county (see Daniel and Ward 1993).

Soils

Not surprisingly, the distribution of general soil associations in Orange County reflects the bedrock geology of the region. An examination of the Orange County Soils Map reveals that the county is made up of a mosaic of almost 40 individual soil types. Generally speaking, these soils are a sandy to silty loam with a clay subsoil (Dunn 1977).

Gently sloping to steep, well-drained soils on uplands predominate in a broad northeastern belt across the county. These soils formed mainly from the underlying metavolcanic rocks and constitute 72% of the county (Dunn 1977:4-5). Nearly level to steep soils on uplands are present in the northwestern corner and much of the southern half of the county. The soils in this group formed mainly from weathered intrusive igneous rock and make up about 25% of the county. Finally, 3% of the county contains soils resulting from weathered sedimentary rocks on gently sloping to strongly sloping uplands or recent alluvial sediments that are found in the Triassic Basin along the southeast border of the county (Dunn 1977:3-6).

Climate

Orange County has a temperate midcontinental climate with adequate rainfall and seasonal variations in temperature. The average daily maximum temperature is 72 whereas the average daily minimum temperature is 48°. The growing season is 200 days long (Dunn 1977:1). Precipitation is distributed evenly throughout the year with an average of about 43 inches annually (Dunn 1977:Table 1).

Flora and fauna

Over one thousand plant species have been recorded in Orange County (Sather and Hall 1988:10). The two most common natural communities today are an upland mesic mixed hardwood forest and a dry-mesic oak-hickory forest (Sather and Hall 1988:4). The former forest is found on moderate to steep lower slopes, above bottomland communities which adjoin streams. Beech, tulip poplar, and red oak are common trees, with a diverse understory and herb layers. Upslope, the mesic mixed hardwood forest often grades into a dry-mesic oak-hickory forest. White oak is the most common oak species, although other oaks and hickories are also present. On slightly drier upland ridges and hilltops a dry-oak hickory forest is also fairly common. This community is indicated by an increase in the presence of post oak. The successional stages characteristic of this vegetation range from old fields to pine woods to hardwoods. Additional forest communities in the form of pine stands, produced largely by human modification of the landscape, are also common in the area. Pine stands are the result of abandoned field succession or purposeful planting; common species include loblolly and shortleaf pine.

In addition to the upland forests, several types of wetland communities are also present in the county. The most common are alluvial and bottomland forests (Sather and Hall 1988:6-7). These communities are common in stream valleys and are characterized by regular seasonal inundation and sediment deposition. Species in wetland forests include river birch, sweetgum, sycamore, tulip poplar, and hackberry.

The native plant communities of Orange County, as well as the Piedmont in general, have undergone some significant changes since the mid 18th century. Poor agricultural practices resulted in soil erosion or nutrient depletion requiring frequent field abandonment and clearing new land. Additional land disturbances in the form of logging operations, which began during the 19th century, cut prime trees for lumber (Oosting 1942:3-5). Consequently, very little remains of the original Piedmont vegetation at the time of white settlement, considered to have been climax oak-hickory forests (Oosting 1942:89). Today, piedmont vegetation now exists as a hodgepodge of fields and forested areas of various sizes; some relict forest stands exist only in small scattered locations such as rocky areas, bluffs, and flooded areas of poor crop quality or inaccessible for timbering.

Oak-hickory forests were important economically particularly for their mast production. Nuts provided an important dietary stable during much of prehistory. In Orange County, preserved wild plant food remains recovered from several late prehistoric and protohistoric sites along the horseshoe bend of the Eno River suggest that hickory, acorn, and walnut were staple foods from at least AD 1000 until contact times. (Gremillion 1993; 1988; 1987). Except for nut harvests, however, the Piedmont hardwood forests probably provided little else in the way of edible herbaceous plants (Gremillion 1987:274).

Although human disturbance of native vegetation has increased dramatically in the past 200 years, such landscape modification was certainly present during the Late Prehistoric and early Historic periods since aboriginal settlement and agriculture required the clearing of forest cover. Some evidence of the latter practice can be found in John Lawson's account of his journey from Charleston to Pamlico Sound in 1700-1701. During his sojourn through the Carolina Piedmont and Coastal Plain, Lawson noted the presence of extensive treeless areas which he referred to as "savannas" (Lefler 1967:34, 56). Since the naturally occurring vegetation was forest, these savannas must have resulted from field clearing and abandonment and/or fire (Gremillion 1984:11). The fire drive, a hunting technique resulting in the burning of large wooded areas, was also used by some aboriginal groups in the Southeast (Hudson 1976:276).

Undoubtedly, some cleared fields were present at least by 1700 along the Eno where maize remains have been recovered along with other cultigens such as the common bean and pepo squash. Evidence of maize cultivation is present as early as A.D. 1000 at the Hogue site, but this probably represents small cultivated garden-size plots rather than larger cleared fields (Ward and Davis 1993).

Piedmont fauna also have been significantly affected by the pattern of human use of the landscape in the past few hundred years. Locally, the vertebrate fauna of Duke Forest contains representative species of the North Carolina Piedmont. Approximately 30 species of mammals, 90 species of breeding birds, 24 amphibian and 30 reptile species have been recorded in the Forest. Aquatic surveys have recorded 44 species of fish in the Eno River and 24 species in New Hope Creek (Edeburn 1981:32).

Again, the Eno River sites provide the best archaeological evidence for those animals exploited locally since AD 1000. The faunal assemblage from the Wall, Hogue, Fredricks and Jenrette sites indicates that white-tailed deer provided the predominant meat source. Other species that contributed to the diet included raccoon, opossum, beaver, black bear, squirrels, muskrat, turkey, turtles, shellfish, and various fish species (Holm 1987; 1988; Ward and Davis 1993:371-373).

Paleoenvironment

The previous discussion of floral and faunal communities in the Piedmont are essentially the result of modern climatic and biotic conditions established since the mid-Holocene (circa 3000 BC). Since significant human occupation existed for several thousand years in the Piedmont prior to that, some discussion of environmental conditions during the late Pleistocene and early Holocene is warranted.

When the first human occupants entered what is today known as Orange County over 10,000 years ago, they would have encountered much different biotic and climatic conditions than today. While specific local conditions are unknown, palynological studies from elsewhere in the state and the Southeast provide a general picture of conditions during the late Pleistocene and early Holocene. During the time between ca. 10,500 and 7000 BC, the area at mid-latitudes (33°-37°) across the Southeast would have been undergoing biotic adjustments as a result of postglacial climatic warming. A mixed hardwood forest would have been in place in North Carolina during this time including oak, maple, beech, basswood, elm, walnut, hemlock, and gum (Delcourt and Delcourt 1981:126) and was characterized by a "cool temperate climate and abundant moisture during the growing season" (Delcourt and Delcourt 1984:276). This mixed hardwood forest was not uniformly stable or homogeneous across mid-latitudes, however, having "marked variation in its expression and timing from site to site" (Watts 1980:39). In North Carolina the mesic forest occurred somewhat later (circa 9000-8000 BC) and was less strongly developed than more southern localities, exhibiting more oak and fewer mesic tress, including hemlock and birch, which were not present to the south (Watts 1980:39).

After about 7500 BC, the demise of the cool mesic temperate forest north of the 33 latitude led to an oak dominated forest with a minimum of pine over much of the Southeast (Delcourt and Delcourt 1981:150). By 3000 BC a distinct difference in vegetational regimes had developed in North Carolina between the Coastal Plain. Previously dominated by the oak-hickory forests, coastal plain forests became dominated by species of southern pine. Pine also increased at the expense of oak in the Piedmont, where an oak-hickory-southern pine forest developed (Delcourt and Delcourt 1981:150; 1985:20-21). Moreover, a significantly lower sea level, present during the late Pleistocene and early Holocene, had also reached its modern conditions by 3000 BC. By that time, the modern climatic regime was established in the Southeast.

CONCLUSIONS

Given the environmental factors discussed above, the conditions related to post-glacial climatic change would have had the most significant effect on prehistoric settlement in the region. However, environmental conditions would have been relatively uniform during any one period of time within Orange County. That is, no obvious differences appear to exist across the county in terms of topography, geology, or other environmental conditions that might have influenced differential prehistoric use of the county. Gently rolling, forested hills, dissected by relatively narrow and gently flowing rivers and streams would have characterized the landscape from one end of the county to the other. If pressed to segment this environmental uniformity into ecological units of relevance to human settlement, one could divide the area based upon its major watersheds. Further discussion of this distinction and its relevance to this project is undertaken in Chapter 3.

Chapter 2

THE ARCHAEOLOGY OF ORANGE COUNTY

Archaeological and historical sites have been recorded in Orange County for over 50 years. Approximately 300 sites were known prior to this survey. About 250 of these have been recorded by the staff and students of the Research Laboratories of Anthropology at the University of North Carolina at Chapel Hill, working together with members of the North Carolina Archaeological Society. The remaining sites have been recorded primarily as a result environmental impact reviews conducted by the Research Laboratories of Anthropology (e.g., Dickens and Ward 1983; Ward 1977; Wilson 1979), the Department of Transportation (e.g., Padgett 1987; 1984), and private business (e.g., Hargrove 1987; 1982).

Despite the relatively large number of sites that have been recorded, none of the survey efforts--with one exception--were designed to produce a representative sample reflecting the distribution and frequency of archaeological sites in the county. The lone exception was the work of Simpkins and Petherick (1985) whose survey was part of a long term research effort designed to understand Late Prehistoric settlement in the Eno, Haw, and Dan River drainages. Because it has predictive value, this study will be reviewed in the final chapter.

The purpose of this chapter is to provide an overview of what is known about the prehistory and history of the county. It is important to keep in mind that throughout much of prehistory, Orange County was only a small part of a much larger settlement range. Therefore, archaeological data from elsewhere in the Piedmont is often referred to in the following overview to more fully understand Orange County prehistory.

With few exceptions the following discussion is typological and cultural historical. There are two reasons for this approach. First, such an approach provides a framework by which to understand the artifacts classified in Chapter 4. Second, this approach also reflects much of the state of our knowledge concerning the prehistory of the region.

PALEOINDIAN PERIOD

The Paleoindian period is generally believed to mark the earliest clear presence of humans in North Carolina and North America in general. Technologically, this period is characterized by a lanceolate shaped fluted projectile point--generally called Clovis--that dates from about 9,500 BC to 9,000 BC (Haynes et al. 1984). The dates for this period, however, come from sites located in the Southwest since no fluted point sites have yet been radiocarbon dated in the Southeast. Although some eastern fluted points may date as early as their Southwestern counterparts, this determination remains unverified (Haynes et al. 1984). Moreover, there is sufficient stylistic variability in eastern fluted points that might indicate spatial and temporal differences greater than in the Southwest (Meltzer 1988).

No in-situ archaeological remains of these earliest inhabitants have ever been found in Orange County--or elsewhere in the state. What evidence that does exist, however, is present in the form of isolated examples of fluted points recovered as surface finds or in shallow plowzone contexts. Some attempts have been made to compile point distributions across the state. The first effort was made some 20 years ago by Perkinson (1971; 1973), while the second occurred more recently at a larger regional level by Anderson (1990a, 1990b). Based upon these two studies, site location and attribute data have been recorded on some 400 fluted points in the state.

At least three fluted points have been recorded in Orange County (although others undoubtedly exist in private collections). Two points, recovered as isolated surface finds, have come from the northern part of the county. The first was a surface find near Cedar Grove (Perkinson 1973:27), while the second was found near Carr (OR249). The third artifact came from excavated contexts in late prehistoric midden contexts at the Wall site in Hillsborough (Tippitt and Daniel 1987:227). The latter point was almost certainly redeposited.

A characteristic of these two of these specimens, typical of fluted points elsewhere, is that they were made of stone not indigenous to the area (e.g., Goodyear 1979). The point found near Cedar Grove was made of a "thermally altered, purple-red, mottled jasper-chalcedony" (Perkinson 1973:27). Although the exact source is unknown Perkinson states that a similar stone is present in Stokes County (SK35). The specimen from the Wall site was made of a highly siliceous green metasiltstone. This stone source is also unknown but it is lithologically similar to argillites that outcrop near Badin along the Yadkin River 115 km to the southwest (Daniel and Butler 1994:150-151). The raw material of the final specimen recovered near Carr is recorded as a "dark gray slate." Although this point needs to be examined in more detail, this description suggests that the stone is a rhyolite whose source is probably in the Uwharrie Mountains also along the Yadkin River (Daniel and Butler 1994).

It has been argued that the presence of "exotic" stone in Paleoindian assemblages reflect the geographic mobility of these early groups (Goodyear 1979). That is, in the absence of any evidence of significant exchange networks during the Paleoindian period (see Meltzer 1989), these early groups probably acquired their tool-stone directly as part of their annual settlement round. If true, then the recovery of the above two points made of nonlocal stone suggests that Orange County may have formed only a small part of a much larger hunting and gathering range for the earliest inhabitants of the area.

EARLY ARCHAIC PERIOD

More numerous in the state are points dating to the Early Archaic period (circa 9500-6,000 BC) when societies were undergoing adaptational changes coinciding with the onset of post glacial climatic amelioration. While Early Archaic stone technologies shared many characteristics with earlier Paleoindian assemblages, an increased regionalism emerged in point types during the Early Archaic (Goodyear 1982; 1991).

In North Carolina, only two sites with in-situ Early Archaic remains have been excavated. One of these sites, Hardaway, is located along the Yadkin River in the central Piedmont; it has provided the stratigraphic and typological framework for ordering Early Archaic assemblages not only in North Carolina but much of the rest of the Southeast (Coe 1964). The second site, 31CH29, was located along the Haw River in nearby Chatham County (Claggett and Cable 1982); this site replicated in finer stratigraphic detail much of the Early Archaic sequence at Hardaway.

The stratigraphy of these two sites was marked by a chronological sequence of distinctive point types beginning with the Hardaway complex. This complex included lanceolate-shaped points with eared bases and serrated blades known as Hardaway-Daltons, and a smaller side-notched Hardaway point with a recurved "horned" base. The lanceolate Hardaway-Dalton is believed to be a part of the Dalton phase that closely follows the Paleoindian period. Although dates for this interval are rare (and do not exist for North Carolina), it is generally believed that the Dalton phase dates from about 9500 to 7,900 BC (Goodyear 1982). The Hardaway Side-Notched point closely followed lanceolate Daltons in time at about 10,000 to 9,500 B.P. (8,000-7,500 BC). While Hardaway Side-Notched points were absent at Haw River, they were recovered at Hardaway and probably were contemporary with side-notched points elsewhere in the Southeast such as Taylor (Michie 1976; 1992), Bolen (Bullen 1975; Daniel and Wisenbaker 1987), and Big Sandy points (DeJarnette et al. 1962).

Side-notched types were replaced by corner-notched styles in the latter part of the Early Archaic. Both Palmer and later Kirk Corner-Notched point were found at Hardaway and Haw River. These points typically have serrated triangular blades, notched corners, with straight to slightly excurvate bases that exhibit varying degrees of basal grinding. No radiocarbon dates exist for these notched points in North Carolina, but similar points have been dated elsewhere in the southeast between about 7500 to 6900 BC (Broyles 1971; Chapman 1977).

After about 7000 BC, the corner-notched tradition is replaced in some parts of the Southeast with the Bifurcate tradition (Chapman 1976). These points are all relatively small and have marked basal concavities or notching. Otherwise the bases are variable with either shallow side- or corner-notching or small stems. Several phases have been identified between about 8,900 and 7,800 B.P. (6,900-5,800 BC), based upon the excavation of dated components outside North Carolina (Chapman 1985; Broyles 1971). Within the North Carolina Piedmont, bifurcate point styles are relatively scarce compared to other Early Archaic and succeeding Middle Archaic types (Davis and Daniel 1990). The exact significance of the Bifurcate tradition in North Carolina has not been resolved. Bifurcates, for example, were present in the Haw River sequence but were absent at Hardaway.

In addition to projectile points, Early Archaic technologies included several unifacial tool types represented by a variety of end and side scrapers. Some of these unifacial tools are fairly distinctive including drop shaped end scraper types which share technological similarities with Paleoindian assemblages. This presumably hafted tool was particularly well represented at the Hardaway site (Coe 1964; Daniel 1994).

Although evidence is not abundant, Early Archaic hunter-gatherers probably utilized a broad "species-rich" (Meltzer and Smith:1986) subsistence strategy to exploit the early Holocene forested woodlands described in Chapter 1. Within the Carolinas, however, there is some debate about the nature of Early Archaic settlement. While some scholars suggest that individual bands moved seasonally between the Piedmont and Coastal Plain along major drainages (Anderson and Hanson 1988), others have proposed that group movement was not confined to drainages and was more variable across the Piedmont and upper Coastal Plain (Daniel 1994).

Evidence supporting this latter model, in fact, has come from Orange County where the recovery of several Early Archaic points made from Uwharrie rhyolite partially suggests that group movement may have included significant cross-drainage mobility (Daniel 1994).

Additional Early Archaic artifacts made from Uwharrie rhyolite were also recovered during this survey (Chapter 4).

MIDDLE ARCHAIC PERIOD

The subsequent Middle Archaic period is identified primarily by the appearance of a series of square and contracting stemmed points. Again, excavations at the Hardaway site as well as the Doerschuk site just across the Yadkin River have provided the typological and stratigraphic framework to order the stemmed point types that comprise this period: Kirk Stemmed, Stanly Stemmed, Morrow Mountain Stemmed, and Guilford Stemmed (Coe 1964). Each of these point types has also been associated with a phase within the tradition of stemmed points during the Middle Archaic (e.g., Chapman 1976; 1977:161-167). And yet, while the chronologic sequence of these points is well established for the area, we have to look outside the state to assign approximate dates to the various phases.

Locally, the earliest stemmed types are Kirk Stemmed and the closely related Kirk Serrated point. These points were recovered in the upper levels of the "Kirk midden" at the Hardaway site which led Coe (1964:70) to suggest a "continuity of style" with earlier Kirk Corner-Notched points. Dates between 6000 and 5800 BC have been obtained for these stemmed points from the Lower Little Tennessee River Valley (Chapman 1985). While this may be the case in Eastern Tennessee where bifurcate points figure prominently in the Eastern Tennessee sequence, the impact of bifurcate forms on the Piedmont sequence remains to be resolved. As noted above, Bifurcates are relatively uncommon in North Carolina and their absence at Hardaway is indicative of their rarity. At Haw River, on the other hand, bifurcates were found together with Kirk Stemmed as well as Small Kirk Corner-Notched and Stanly Stemmed points (Claggett and Cable 1982).

Relatively more common in the Piedmont are Stanly points. This type is distinguished by its broad "Christmas tree" shaped blade and its small squared stem that exhibits a shallow notch (Coe 1964:35). Stanly points were the earliest point type found at the Doerschuk site and in the upper levels of the Hardaway site (Coe 1964). The Stanly phase has been dated in eastern Tennessee between 5800 and 5500 BC (Chapman 1985).

The Morrow Mountain phase follows the Stanly phase. The distinguishing feature of this point is its contracting stem. Initially, two point types (Morrow Mountain I and II) were defined based upon shoulder shape and stem length (Coe 1964). Moreover, these differences were proposed to have chronological significance. Subsequent work at other stratified sites, however, have failed to corroborate this temporal distinction (Cable 1982:487; Chapman 1977:33). Rather, it is more likely that the two "types" represent sequential stages in the manufacture of a single type.

Without the benefit of radiocarbon dates, Coe (1964:123) suggested that Morrow Mountain did not date much earlier than 4500 BC. Since then, numerous radiocarbon dates for the Morrow Mountain phase have been obtained from sites in several states. Summarizing data from Tennessee, Alabama, and South Carolina, Blanton and Sassaman (1989) list eight radiocarbon dates spanning a period between about 5500 to 4000 BC. More recently, three additional radiocarbon dates from a Morrow Mountain component at the Rae's Creek site in Georgia span a period between 5400 and 4600 BC, consistent with dates from the early part of the phase (Crook 1990).

Fifteen hundred years, of course, appears to be rather long period for a single phase. However, the relative length of this phase compared to preceding phases may be due, in part, to the greater number of available Morrow Mountain dates (Blanton and Sassaman 1989). It is also interesting to note that what is called Morrow Mountain apparently took place at different times in different places across the Southeast, since there appears to be a geographical clustering to the dates. That is, the earlier phase dates (circa 5500-4500 BC) all come from Tennessee and Georgia while dates from the latter half of the phase (4500-4000 BC), come from Alabama (Blanton and Sassaman 1989:Figure 3.4). What these dates may imply for dating Morrow Mountain in the Carolina Piedmont is certainly moot, except to say that the phase probably did not last a full fifteen hundred years (but cf. Gunn and Wilson 1993:172).

The Guilford phase, which marks the terminal part of the Middle Archaic in the region, is represented by a spike-like point virtually lacking a shoulder leaving little break in point outline between its blade and stem. Moreover, Guilford stems are concave, rounded, or straight (Coe 1964:43). In contrast to Morrow Mountain points, Guilford points appear to be more geographically restricted in occurrence, confined mostly to the North and South Carolina Piedmont and perhaps Virginia (Coe 1964:43; Blanton and Sassaman 1989). Guilfords are rare in eastern Tennessee (Chapman 1985) and are absent in the South Carolina Coastal Plain (Sassaman et al. 1990:153). A somewhat similar form known as the Brier Creek Lanceolate, however, may be the Coastal Plain equivalent of Guilford (Sassaman et al. 1990:153).

The Guilford point was stratigraphically isolated at the Doerschuk site and at the Gaston site in the northeast Piedmont along the Roanoke River (Coe 1964). Until lately, no radiocarbon dates existed Guilford, but a date of about 3400 BC obtained just above the Guilford level at the Gaston Site indicated a date no earlier than 4000 BC to Coe (1964:118) for this phase. Recently, however, a radiocarbon date of 5,350± 60 B.P. (circa 3350 BC) was obtained from an apparent Guilford hearth at Copperhead Hollow along the Lynches River in northern South Carolina (Gunn and Wilson 1993:128-129). Coe's estimated date and this recent radiocarbon date, then, would suggest an interval between about 4000 and 3400 BC for the Guilford phase.

Beyond the changes in point types during the Middle Archaic, some changes also appear in other aspects of Middle Archaic assemblages. Well-made unifacial tools which were part of Early Archaic assemblages were replaced by less formalized flake tools (Coe 1964; Blanton and Sassaman 1989). For example, by Stanly times, the Type I End Scraper no longer appears in Middle Archaic assemblages. Some new tool forms also appear during the Middle Archaic, however. Semilunar atlatl weights were present in the Stanly levels at Doerschuk (Coe 1964:52-53). Large and roughly made chipped stone axes were also associated with the Guilford complex at the Gaston site (Coe 1964:113).

Despite the common occurrence of Middle Archaic points in Orange County, no buried Middle Archaic components are yet known. Rather, surface finds and shallow plow zone deposits appear to be their common context of recovery throughout the Piedmont. Middle Archaic points, particularly the Morrow Mountain and Guilford types, were relatively common in this survey (see Chapter 4). Surveys in Orange County and elsewhere in the Piedmont record these occurrences as "lithic scatters" often associated with multi-component sites (e.g., Blanton and Sassaman 1989; Goodyear et al. 1979).

LATE ARCHAIC PERIOD

At about 3000 BC, the Late Archaic in the Piedmont is marked technologically by the presence of a large, broad bladed and stemmed points, steatite bowls, and full-grooved axes (Coe 1964:119). Once again, the Doerschuk and Gaston sites have provided the best contextual data for Late Archaic adaptations in the Piedmont (Coe 1964). Charcoal combined from three hearths Savannah River hearths at the Gaston site gave an average date of about 2000 BC (Coe 1964:119).

Compared to elsewhere in the Southeast, relatively little is known about the Late Archaic in the Piedmont (Ward 1983). Greater regionalism becomes apparent in Late Archaic adaptations with increased sedentism and a focus on riverine and coastal resources in most areas of the Southeast (Steponaitis 1986). While the Carolina Piedmont exhibited some of the lifeway changes noted for the Late Archaic (e.g., stone vessels), other trends such as the presence of dense middens and evidence of the intensification of long-distance exchange remain unknown (cf. Steponaitis 1986:372-378).

One apparent technological trend in projectile point technology that has been noted, however, is that of decreasing size (Oliver 1981; South 1959). The Small Savannah River, as the name implies (South 1959:153-157), resembles a smaller version of the Savannah River point. Based upon the recovery of this small stemmed point in the upper levels of the Savannah River zone at the Doerschuk and Gaston sites in the Piedmont, this type has been chronologically associated with the terminal end of the Late Archaic (Oliver 1981; South 1959). Given the date for classic Savannah River noted above, the smaller form probably post dates 4,000 years ago. But, it is still unclear if these smaller points completely replace the classic or large Savannah River. Resolution of this problem awaits further stratigraphic consideration. In any event, several small stemmed points were recovered during this survey that were identified as Small Savannah River (Chapter 4).

WOODLAND PERIOD

Building on the trends that emerged during the Late Archaic, the Woodland period is characterized by the first widespread use of ceramic pots and the presence of horticulture (Steponaitis 1986). Accordingly, the beginnings of the Woodland Period is somewhat arbitrarily placed in the few centuries after 1000 BC and continued to about AD 1000. By convention the period is divided into three intervals: Early Woodland, Middle Woodland, and Late Woodland. Comparatively little research has been conducted on the Woodland Period in the Piedmont. And what work has been done, has been concerned with chronology building.

The Doerschuk and Gaston sites have provide the framework for understanding Woodland chronology in the Piedmont, along with some more recent work at Haw River (Claggett and Cable 1982). The excavations at Doerschuk and Gaston revealed two different Woodland ceramic sequences, and it is the Doerschuk sequence that is of relevance to the survey area. Badin represents the earliest pottery series; it is well made, sand tempered, and either cord or fabric marked (Coe 1964:27). The Yadkin ceramic series closely followed Badin. It too included cord- and fabric-marked pottery which was tempered with crushed quartz (Coe 1964:30). Without benefit of radiocarbon dates, Coe (1964:55) suggested both types were made just prior to AD 500. Recently, a feature containing Yadkin pottery was dated at 190 BC at Haw River (Claggett and Cable 1982:601). Given this date and what we know today concerning Woodland chronology elsewhere in the Southeast, these ceramic types should roughly fall into the Early and Middle Woodland periods, between 500 BC and AD 500.

Associated with the Badin and Yadkin pottery series are some significant changes in point form marked by the presence of triangular stemless points referred to as Badin Crude Triangular and Yadkin Large Triangular (Coe 1964:45). The Badin type, as the name implies, is a large, crudely made triangular point while the Yadkin is a more finely made and thinner point with a concave base. "Eared" varieties of the Yadkin have also been described (Coe 1964:47). While it has been argued that the Badin type predates the Yadkin type (Coe 1964:45), Badin may simply be a preform for Yadkin (Sassaman et al. 1990:164).

Stemmed points, however, do not entirely disappear with the onset of the Woodland period. The decreased size in stem points which emerged during the latter part of the Late Archaic apparently continues into the Woodland as some small and often crudely chipped stem points have been recovered in Early Woodland contexts with triangular points. Small stemmed points have been found in Early Woodland contexts in the northeast Piedmont where they were referred to as Thelma Stemmed (South 1959:151-152) and in the Mountain region where they have been labeled Plott Short Stemmed (Keel 1976:126-127) and Swannanoa Stemmed (Keel 1976:196-198). More recently, a single example of a similar small stemmed point has been identified in the Badin zone at the Doerschuk site and labeled Gypsy Stemmed (Oliver 1981:185). However one wishes to refer to these very small stemmed points, it is evident that a decrease in point size continued into the Early Woodland. How much temporal overlap, if any, these stemmed points had with triangular points remains unknown.

The only Late Woodland phase in the Piedmont is known as Uwharrie. Uwharrie phase pottery is net impressed, tempered with crushed quartz, and has scraped interiors (Coe 1952). This phase probably dates from about AD 500 to 1000 or perhaps a little later. While a Uwharrie phase site has been excavated along the Eno River near Hillsborough, the pottery appears to be a late manifestation of the Uwharrie series and was placed in the Haw River phase of the Late Prehistoric period, dating just after AD 1000 (Ward and Davis 1993:408).

It may have been the case that no significant Woodland habitation took place in the vicinity of Orange County. What Woodland components that are known for the Piedmont have been reported either further west along the Yadkin River (McManus 1985) or to the east along the Roanoke River (South 1959)--although both areas are associated with different ceramic traditions. Thus, Woodland occupation in Orange County was probably limited to hunting trips or other special forays. Evidence for this type of behavior may be reflected in some of the Woodland points found during this survey (Chapter 4).

LATE PREHISTORIC THROUGH THE CONTACT PERIOD

While we have had to look to other areas in the Piedmont to understand much of Orange County prehistory prior to AD 1000, that is not the case after that date. As a result of recent excavations along the Eno River near Hillsborough, as well as related work along the nearby Haw and Flat Rivers, we now have a wealth of information concerning the late prehistoric and historic Indian groups for this portion of the Piedmont (Davis and Ward 1991; Dickens et al. 1987; Ward and Davis 1988).

The Eno, Haw, and Flat Rivers and their tributaries were the focus of local native settlement from about AD 1000 until the early eighteenth century. Several phases during this time period have been identified, the earliest of which is called the Haw River from AD 1000 to 1400. The Haw River phase is defined by two ceramic series. The first is considered a late manifestation of the Uwharrie series (AD 1000-1200), primarily represented by net impressed exteriors, scraped interiors, and crushed quartz or coarse sand temper. Some brushed, cordmarked, and plain surface treatments are also included. The second ceramic series--the Haw River series--marks the latter half of the phase (AD 1200-1400), and is also characterized by net impressed exteriors but is distinguished from the Uwharrie series by the presence of lip and neck decoration and in vessel form. Moreover, net impressing was the dominant surface treatment, while other surface treatments such as cordmarked, brushed, and plain were rarely used. Stone tool assemblages during this time included small triangular points, other bifaces, chipped stone hoes, and a few flake tools. Large chipped stone choppers, ground stone celts, grinding stones, and hammerstones are also found in Late Prehistoric sites. In fact, this lithic assemblage does not significantly change into historic times (Ward and Davis 1993).

Over 20 sites within the three drainages are known for this time period, five of which have been excavated. Most of these sites can be characterized as small settlements with widely scattered households and associated storage pits, hearths, and burials. Occupations were probably relatively brief, by small populations. The Hogue site, in Hillsborough, is an example of an early Haw River phase occupation (Ward and Davis 1993).

The Haw River phase is followed by the Hillsboro phase lasting from AD 1400 to 1600. This phase includes that period when the first contacts were made between Europeans and natives in the Southeast, although there is no evidence that this contact actually took place locally. This phase is recognized by the presence of Hillsboro series pottery which is markedly different than earlier Haw River pottery (Coe 1952; Davis 1987). For example, simple stamping and check stamping replaced net impressing as the common surface treatment. Given such contrasts, it has been argued that these two traditions materially reflect two distinct peoples (Davis and Ward 1991; Ward and Davis 1993:410-413). Stone-tool assemblages from the Hillsboro phase, however, are very similar to those from the Haw River phase (Ward and Davis 1993).

Two settlement types are recognized for the Hillsboro phase. During the early part of the phase, sites occur as compact nucleated villages. A good example of this settlement type is the Wall site located in the same horseshoe bend of the Eno as the earlier Hogue site. Over one-quarter of an estimated .5 ha of the site have been excavated exposing multiple palisade lines, several circular houses, and an extensive midden (Davis and Ward 1991; Dickens et al. 1987). Later Hillsboro phase sites, in contrast, are small and situated along valley margins or nearby uplands of small tributary streams. Moreover, sites occur as scattered communities made up of a few families. Examples of two late Hillsboro phase settlements include the George Rogers and Edgar Rogers site excavated in nearby Alamance County, containing clusters of postholes and trash-filled pits.

The following Jenrette and Fredricks phases (AD 1600-1710), assigned to the contact period, are distinguished by the presence of historic trade artifacts. The Jenrette phase is defined based on excavations at the Jenrette site along the Eno River. This site may represent the Shakori Indian village of "Shakor" visited by John Lederer in 1670 (Cumming 1958). Excavations have revealed a portion of a palisaded village that covered about .2 ha with numerous pit features. Pottery of the Jenrette phase has plain or roughly smoothed exteriors with fine crushed quartz temper; some simple stamping also occurs. Brushed and cob impressed surface treatments are also present but rare. Historic trade goods found at Jenrette included gunflints, kaolin pipe fragments, glass beads, and a few metal items.

The Fredricks phase (1680-1710) is based on the excavations of the Fredricks site which is immediately adjacent to the Jenrette site (Dickens et al. 1987; Ward and Davis 1988). The Fredricks site is believed to be the settlement visited by John Lawson in 1701 (Lefler 1967). It is just over .10 ha in size and consists of a palisaded village enclosing patterns of about 11 houses arranged around a plaza and sweat house. At least two cemeteries were located just outside the palisade walls. Fredrick phase pottery consists of two types of the Fredricks series--Fredricks Plain and Fredricks Check Stamped (Davis 1988). This pottery appears to be distantly related to the Jenrette series being, among other characteristics, thinner walled and sand tempered. A wider range of trade goods were also present at Fredricks as opposed to Jenrette including knives, hoes, kettles, guns, and beads.

The aboriginal demand for trade goods, of course, was sustained by the European demand for deerskins. And it was the deerskin trade, in combination with disease, slavery, and war that marked the beginning of the massive depopulation of native Piedmont groups. What tribal remnants that survived were forced to move and form new social and political entities as more traders and settlers moved further into the Piedmont from Virginia and South Carolina. By the early 1700s, most of the Carolina Piedmont was vacated by native populations.

ORANGE COUNTY HISTORY

With the abandonment of the Piedmont in the early eighteenth century, there was no significant resettlement in the region for several decades. In contrast to the deerskin trade that originally drew the white-man into the Piedmont just prior to 1700, it was the availability of fertile land at low prices that attracted him in the mid eighteenth century. By 1750, descendants of colonists from the Northeast moved south along with English settlers who moved west from the coast. Other foreign settlers also arrived, including Scots, Scotch-Irish, and Germans. Many of these settlers received land grants and established homesteads along the rivers and creeks of Orange County (Powell 1989:104-106).

Originally, Orange County was much larger than its present size. Formed in 1752 with a population of 4,000, the county encompassed some 9065 sq km (3,500 square miles) from Virginia to Lord Granville's line which included about the northern third of North Carolina. From 1770 to 1881, all or part of nine counties were eventually formed from portions of Orange County, which was named in honor of William V of Orange (Lefler and Wager 1953:17-23). In 1754, the county seat known simply as Orange, was located on 162 ha (400 acres) north of New Hope. This settlement went through several name changes, however, finally receiving the name of Hillsborough in 1766 (Lefler and Wager 1953:17-23).

Given these land grants, it is not surprising that agriculture was the mainstay of the area's inhabitants. Primarily due to absence of reliable roads and navigable waterways to ship crops to market, agricultural practices were limited to subsistence farming. These self sufficient farmers raised a variety of crops such as beans, peas, wheat, corn, and sweet and Irish potatoes (Powell 1989:4). A limited amount of cash crops such as cotton and tobacco was also produced to provide money for manufactured goods.

During the last half of the 18th century more than 75% of property owners held between 40 and 200 ha (100-500 acres); only 5% of the land owners held more than 405 ha (1,000 acres) (Lefler and Wager 1953:16). Any farms over 200 ha (500 acres) in size were considered large and it was these farms that tended to produce the exported tobacco and cotton. Only 10% of county households owned slaves in 1750, and neither the number of slaves or slave owners increased substantially throughout the 18th century (Powell 1989:131-135). The Stagville Plantation--once a part of Orange County but now located in Durham County--was one of the largest farms in the county. In 1778, the plantation covered over 1620 ha (4,000 acres) with 31 slaves (Crow et al. 1992:12-18).

Although farming was the main livelihood during the late 18th century, a few other occupations existed that supported farmstead operations. These services included blacksmiths, tanners, coopers, weavers, and wagon makers. Additional services were supplied by gristmill operations that sprang up throughout the county powered by the numerous shallow streams in the region. The Scotch-Irish and Germans were particularly adept at building and operating gristmills, importing this technology from their homelands (Powell 1989:132).

One political event of note also occurred in the county during the late 18th century. Hillsborough was the political focus of the Regulator movement in 1770, when Piedmont farmers united attempting to reform unfair taxing practices. When political efforts failed, violence ensued, but the Regulators were defeated at the Battle of Alamance by government militia in 1771 (Powell 1989:148-159).

Rural farm life changed little over the first half of the 19th century as subsistence farming still dominated Orange County lifeways. A lack of reliable transportation still prevented access to markets, inhibiting statewide communication and further entrenching farmlife. Lacking the benefit of modern land management practices, 18th and 19th century farming practices contributed greatly to soil erosion and nutrient depletion in the Piedmont (Powell 1989:245-249).

The transportation problem lessened somewhat in 1851 with the construction of a railroad from Goldsboro in eastern North Carolina via Hillsborough to Charlotte in the southwest Piedmont. Besides providing farmers with a means to get their crops to market, the North Carolina Railroad also led to the outbreak of small towns and industries along its route. Durham, which was still a part of Orange County in 1854, became a center of trade and commerce (Carter and Peck 1994:20). This transportation allowed a growing number of large planters to grow cash crops in the first half of the 19th century. With the help of slave labor, tobacco was grown in northern Orange County while cotton was grown in the central eastern part of the county.

Following the Civil War, however, the make-up of land ownership changed. Lacking a reliable source of labor, much land had to be taken out of production. Subsequently, much of this fallow land was sold by the larger planters resulting in an increase in the number of farms and a decrease in their size (Powell 1989:417). Another significant change in rural lifeways during the late 19th century was the rise of tenant farming. Tenant farming took one of two forms in Orange County. The first form included those who rented the land for a fixed price while the second included those who worked for a share of the crops (Powell 1989:417). In either case, the standard of living for tenants was low since the small amount of cash was usually claimed by the local merchant or landlord.

The last few decades of the 19th century also saw a rise in small industry and business across Orange County. With the increase in the planting of cash crops, the demand for manufactured goods and specialized services arose. Items and services that were formerly produced on the farm were now available from a new enterprise in the region--the local county store. Such stores were often located at the intersection of two main roads. These stores, in turn, attracted other businesses. Cedar Grove, for example, established in the northern part of the county in the late 18th century, maintained a hotel, tannery, a flour and grist mill, and at least three medical practices by the late 1860s (Carter and Peck 1994:29).

One particular small industry that continued to grow during the late 19th century was that of mills. Flour and grist mills were scattered along the county's waterways to provide farmers with a means of grinding their own grain; some farmers also built mills to supplement their farming income. Several mills are known to have existed along the Little River, Eno River, Back Creek, and Lynch Creek. Although fewer in number, saw mills were also located in the county. Likewise, the presence of the state railroad provided further incentive for industry and factories. By the early 1900s, for example, Mebane attracted a furniture and bedding company as well as a yarn mill. Perhaps the clearest example of this minor trend towards industrialization in the late 19th and early 20th centuries was the growth in tobacco factories in Durham. In fact, the population growth associated with factory employment necessitated the formation of Durham County from portions of Orange and Wake counties in 1881 (Powell 1968:17-20).

The beginnings of the 20th century marked yet another social trend in Orange County: the urbanization of the southeastern portion of the county due to the expansion of the University of North Carolina at Chapel Hill. The university, which was chartered in 1789, has recently celebrated its bicentennial. Despite the urbanization in the southern section of the county, the northern portion has remained predominantly rural in character, producing tobacco, corn, and wheat. One change in agricultural practices in the county, however, has been that of a shift from cotton to dairying in the southwestern part of the county (Lefler and Wager 1953:241-242). Today the county is comprised of seven townships with three population centers. These centers include Hillsborough, located in the center of the county, with Chapel Hill and its neighbor Carrboro, located in the southeast corner of the county (Figure 2.1).

Despite the considerable potential for historical archaeology in Orange County, little such work has been done. Rather, efforts have been spent on recording historical architectural remains. Surveys for historical sites have recently been completed for the county recording about 660 historic structures and properties (Carter and Peck 1994; Lally and Little 1992). Actual excavation on historic sites has consisted of some limited testing on two nineteenth century log cabin sites (Daniel and Ward 1993) and the just completed fieldwork at the Tavern House/Eagle Hotel (1796-1921) located on the University of North Carolina campus in downtown Chapel Hill.

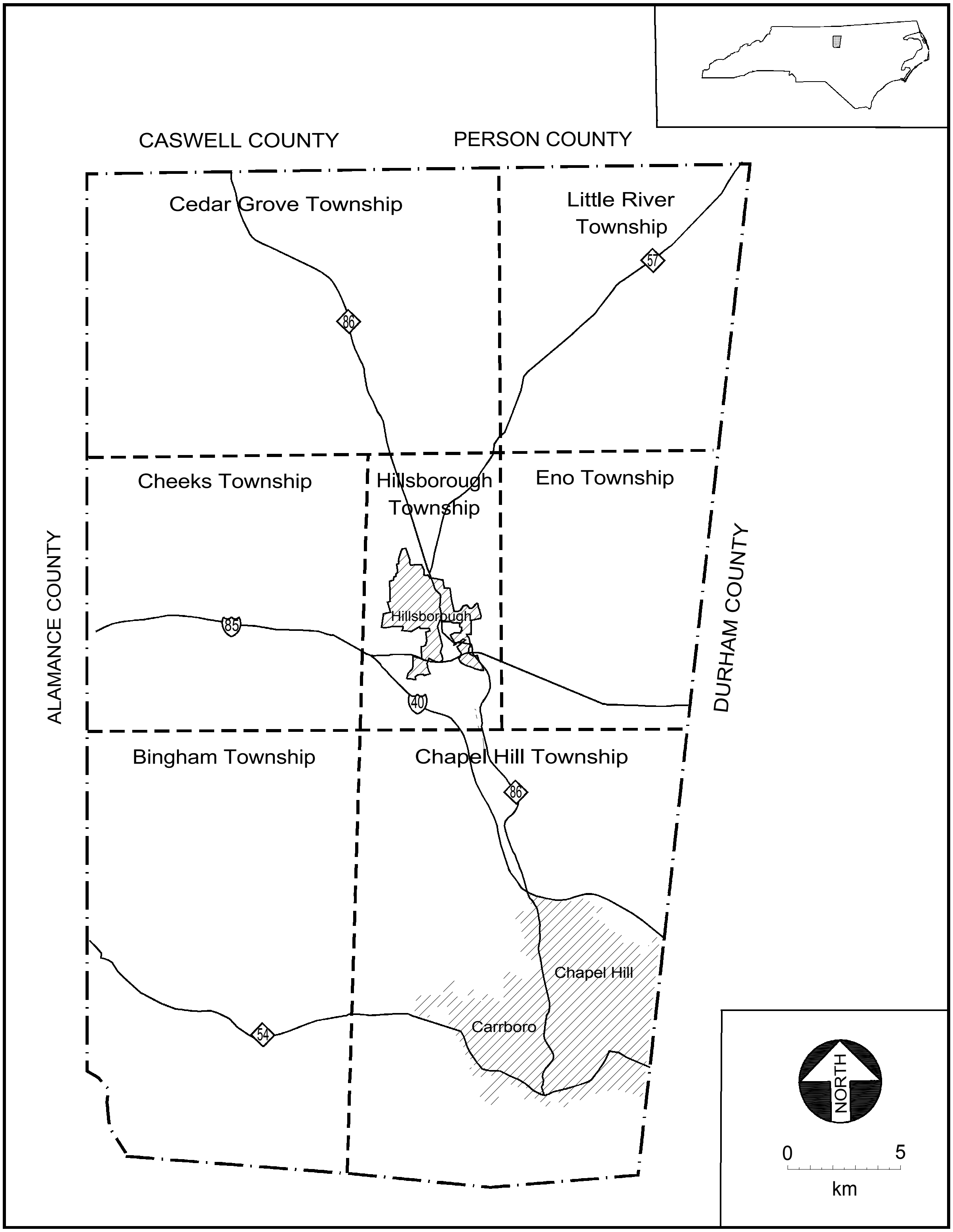

Figure 2.1. Orange County townships.

Chapter 3

SURVEY STRATEGY

Several factors were taken into consideration in planning the field work for this project. First, the size of the study area was relatively large; the county covers some 1,000 sq km. Second, the size of the field crew was small; rarely could more than two persons work per day. When these restrictions were weighed against project time limitations, it was obvious that a systematic survey strategy would provide the best results. Finally, although not a limitation, one additional factor figured into the survey strategy---the distribution of known archaeological sites in the county. How these factors structured the field work are discussed in this chapter.

REGIONAL SAMPLING STRATEGY

A survey strategy was needed to recover an unbiased sample reflecting the distribution and frequency of the archaeological remains in the project area. Entirely judgmental or haphazard survey strategies were not considered appropriate because they provide no way to judge the adequacy of the sample. Instead, a probabilistic sampling strategy was chosen as the most appropriate means of obtaining unbiased survey results. Such a strategy was also necessary in order to generate the predictive model of the distribution and frequency of archaeological remains for the county discussed in Chapter 6.

Several probability sampling techniques exist for regional surveys (e.g., Plog 1976; Redman 1975). The technique selected for this study was a stratified random sample. In a stratified random sample, the survey region is divided into sections or strata. In this case, it was felt that the sampling design could be improved through stratifying the survey area based upon environmental criteria. As noted earlier, much of past human settlement was influenced by the natural environment; thus, sample strata in regional surveys are typically defined on the basis of environmental criteria.

The environmental data reviewed in Chapter 1 suggested that the county could be ecologically divided according to its main watersheds. In fact, a cursory review of previous archaeological work in the county suggested that the county's drainages were probably an influential factor conditioning prehistoric site distribution (e.g., Simpkins and Petherick 1985). This review of known site locations also revealed another important factor that influenced the survey design. While archaeological remains were recorded in the townships that comprise the southern two-thirds of Orange County, virtually no sites were recorded in the Little River and Cedar Grove Townships in the northern third of the county. This absence, however, seemed to be more the result of an absence of archaeological work in the area than any real void in prehistoric settlement. In short, northern Orange County was *terra incognita*, archaeologically speaking.

For the purposes of this project, then, survey efforts were focused on the Little River and Cedar Grove Townships. For the purposes of sampling, the major drainages in each of these townships, the Little River and Back Creek, were spatially divided into two strata that had some degree of internal coherence: *riverine* and *upland*. Although somewhat arbitrary, the distinction between these two strata was based on distance to either the Little River or Back Creek. In general, the riverine stratum comprised the geographic zone within 1 km of each major stream, and the upland stratum comprised the zone more than 1 km away. It should be noted, however, that small tributaries from each of the streams often fingered into the upland stratum so that rarely was there any location that was more than 1 km from some flowing water. It should also be noted that although the Little River actually branches into two forks (the North and South forks) in northern Orange County, no such distinctions were made for this survey. That is, for sampling purposes, the two forks were considered as a single waterway.

Having established the two strata, sample units within each stratum were defined. Quadrats and transects are the two most frequent shapes used for regional archaeological survey (Judge et al. 1975; Plog 1976). Quadrat-like sample units were chosen for this survey because of their convenience in an area like northern Orange County where the landscape is shaped by extensive farming practices (cf. L. Steponaitis 1987).

Generally, quadrats are created by placing a grid over the survey area, generating square units of equal size. While this approach works well on open and uniform landscapes, it did not seem practical here. Our reconnaissance trips into the Little River and Cedar Grove townships, as well as our examination of area maps, indicated these townships are primarily a mosaic of dairy and agricultural fields, forests, and limited developed (i.e., residential and commercial) property. Moreover, all of these features are interrupted by numerous streams. This variability caused problems in locating the boundaries of a square sample unit in an area that would traverse several natural and cultural features.

Consequently, instead of using a square grid to define sample units, cultural features (e.g., roads, transmission lines, field boundaries) and natural features (e.g., rivers, draws) were used to form sample unit boundaries. Defining sample units in this way had the advantages of being easy to identify in the field and often coinciding with property lines. Approximately 1 sq km was chosen for the size of each sample unit. This unit size allowed relatively large contiguous areas to be examined, while insuring adequate sampling throughout the study area. Finally, although this strategy resulted in irregularly shaped sample units that varied somewhat in size, this variability does not affect the statistical validity of the stratified random sample, as long as an accurate total of the area surveyed within the unit is maintained. This strategy has been particularly successful elsewhere under similar survey conditions (see L. Steponaitis 1987).

Sample Unit Selection

Given the logistical constraints noted above, it was readily apparent that the survey of exposed agricultural land would provide the best results for efficient data recovery. Such an approach also seemed practical since, as noted above, there was a large amount of agricultural land in both townships. While other land-use categories such as forests and pasture could have been surveyed with shovel test pits, the time-consuming nature of this method (that frequently results in limited data return) was judged to be impractical for our purposes. Therefore, it was decided to conduct a surface survey of cultivated areas.

Limiting our search to agricultural fields, however, raises the issue of potential survey bias--if it was the case that agricultural fields were nonrandomly distributed in relation to the other three land-use categories. An informal evaluation of the distribution of agricultural land suggested that such a bias would not be a problem, since crop fields appeared to be randomly distributed topographically in relation to forests, pastures, and developed land. All cultivated and developed land is located on relatively level or gradually sloping areas on ridgetops and hilltops. Other topographic locations, such as narrow bottomlands or relatively steep slopes were usually forested. Thus, with the exception of the latter topographic features--which were not particularly conducive to settlement--the probability of excluding an important topographic setting as the result of a selecting only agricultural fields for survey was deemed low.

Sample units were plotted on USGS 7.5' topographic maps and numbered sequentially for each stratum along the Little River and Back Creek within Orange County. Next, a random numbers table was used to select a series of sample units from each stratum. In practice, the entire area of the sample units were not surveyed because not all land within the sample units were cultivated.

A series of units were drawn for each stratum as potential survey alternates since it could not be known in advance if it was actually possible to survey any particular sample unit. This evaluation was made at the time of survey primarily based upon two factors. First, sample units were eliminated if they did not contain suitable agricultural fields (i.e., the area was covered by pasture, forest, unplowed fields, or developed areas). Second, sample units were also eliminated if permission to survey land could not be obtained. Prior to the fieldwork, it was hoped that at least four sample units from each stratum could be surveyed. As it turned out, this goal was not only met but exceeded in three of the four strata (Table 3.1).

During the course of the survey, the randomly chosen sample units were supplemented by additional units which were selected based upon permission to survey the land and good field conditions. These units were referred to as *unbiased* units in the sense that they were chosen without knowledge of any known archaeological remains. These unbiased units can be considered equivalent to the random units, except that the randomizing process involved in the selection was based on opportunities presented during fieldwork rather than a random numbers table (cf. L. Steponaitis 1986:113-114).

The distribution of sample units surveyed is illustrated in Figures 3.1-3.2. The area surveyed in each of the sample units is given in Table 3.2. The total amount of area surveyed along with the percentage of each stratum sampled is listed in Table 3.3. Although only 2% of the study area was surveyed, relatively unbiased information was recovered through the use of probability sampling techniques. The utility of this sampling design allows us to discuss the archaeological data reliably in terms of its frequency, distribution, and variety. These topics are addressed in Chapter 5.

FIELD METHODS

Given the probabilistic sampling strategy chosen, field methods were necessary that provided an efficient and accurate method of data collection. If a preliminary reconnaissance of the land conditions within a sample unit revealed several plowed fields, then a survey of that sample unit was attempted. Since virtually all the land within the sample units is privately owned, obtaining permission from landowners or tenants was necessary before the actual survey could be carried out. Generally, permission was sought by simply talking with the landowner or tenant at the time of the survey. Fortunately, owner cooperation was fairly high and only rarely was permission denied to walk fields. By the end of the fieldwork, land tracts owned by 18 individuals had been included in the survey. Fieldwork

Table 3.1. Sample Units Surveyed.

Drainage: Stratum	Total number of units	Number of Sample Units Surveyed	Sample Unit Numbers Random	Sample Unit Numbers Unbiased
Little River:				
Riverine	58	9	5, 6, 40,	10, 19, 29,
Upland	98	5	4, 21, 41, 63	-
Back Creek:				
Riverine	23	4	7, 10, 14, 15	-
Upland	35	6	7, 13, 14, 26	12, 25

was carried out from January to April, when field conditions offered the greatest visibility (see discussion below).

Given that the vast majority of the fieldwork was limited to agricultural fields, each field was used as a "provenience unit" in the sense that fields were a convenient way to divide sample units into smaller sections that would simplify recording procedures. Each field was numbered sequentially, preceded by the initials OR (Orange County) and an X (to indicate a field rather than site number). If cultural material was recovered within a field, then the field number would be followed by a dash and an additional field specimen number assigned to that artifact or group of artifacts.

Data Recording

A recording form was completed for each field to insure consistent recording of field information. Information recorded on the form included provenience data, field size, field conditions, and a list of field specimen numbers assigned to that field. Provenience information included the number assigned to the field and field location (township, U.S.G.S. quadrangle map name, associated river, stratum and sample unit number). The total area of the field was calculated in hectares using large-scale (1:400) aerial photographs. In addition, field conditions which affected the recovery of archaeological remains were also documented. This information included the type of ground cover, the type of crop, and crop condition. With only two exceptions--consisting of recently cleared forested areas--ground cover type was confined to agricultural fields. Crop type was predominantly winter wheat, although some corn, bean, and tobacco fields were also encountered. Crop conditions were almost always newly planted or prepared fields just prior to planting, although a few fields were unplanted but harvested.

Finally, a subjective estimate of surface visibility was also recorded. This estimate was a percentage of exposed ground surface primarily based upon crop height and wash conditions (i.e., the amount of recent rain). Fields that had received some recent rain, of course, rendered artifacts more visible as soil was washed from their surface. Fortunately,

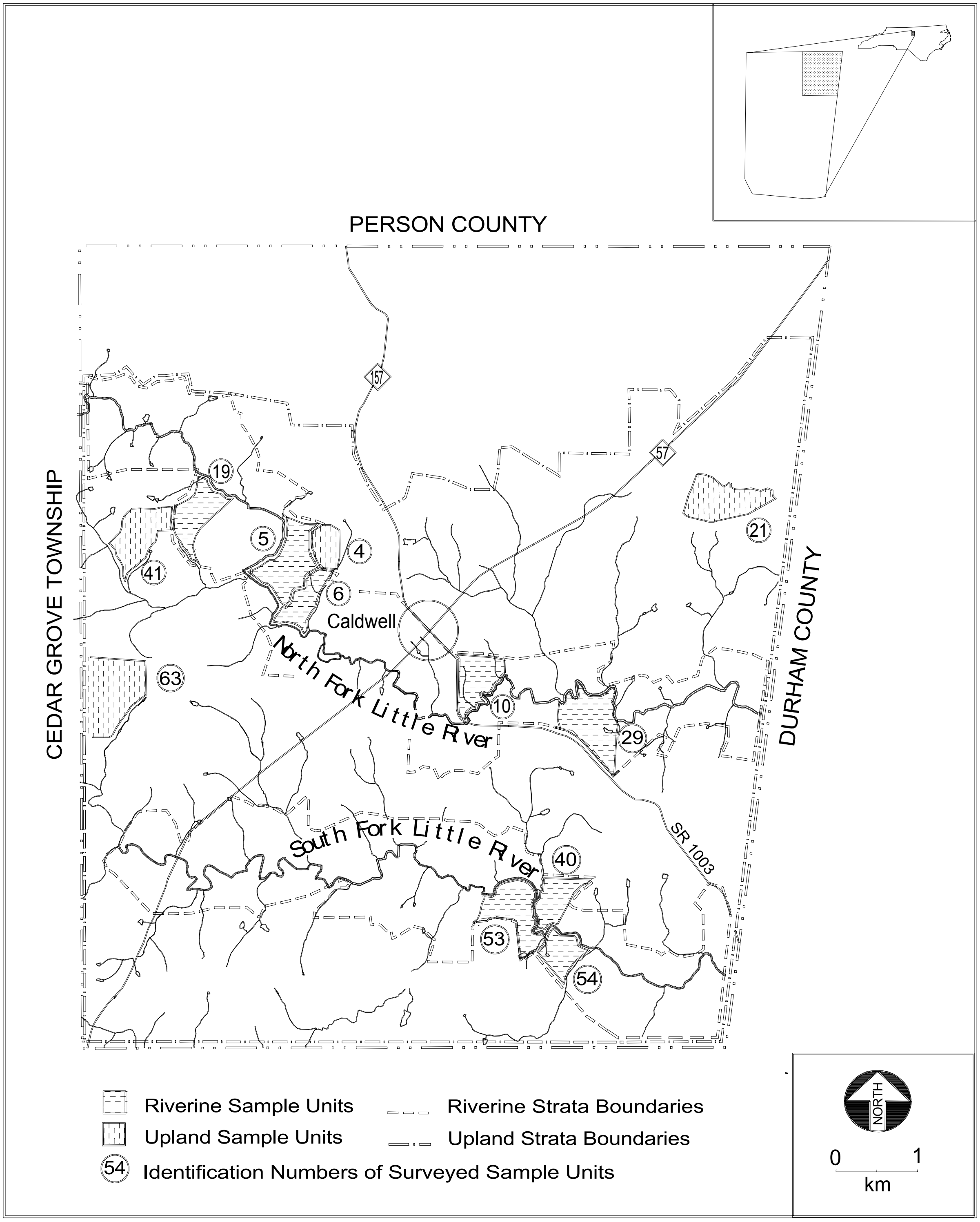

Figure 3.1. Locations of Little River sample units.

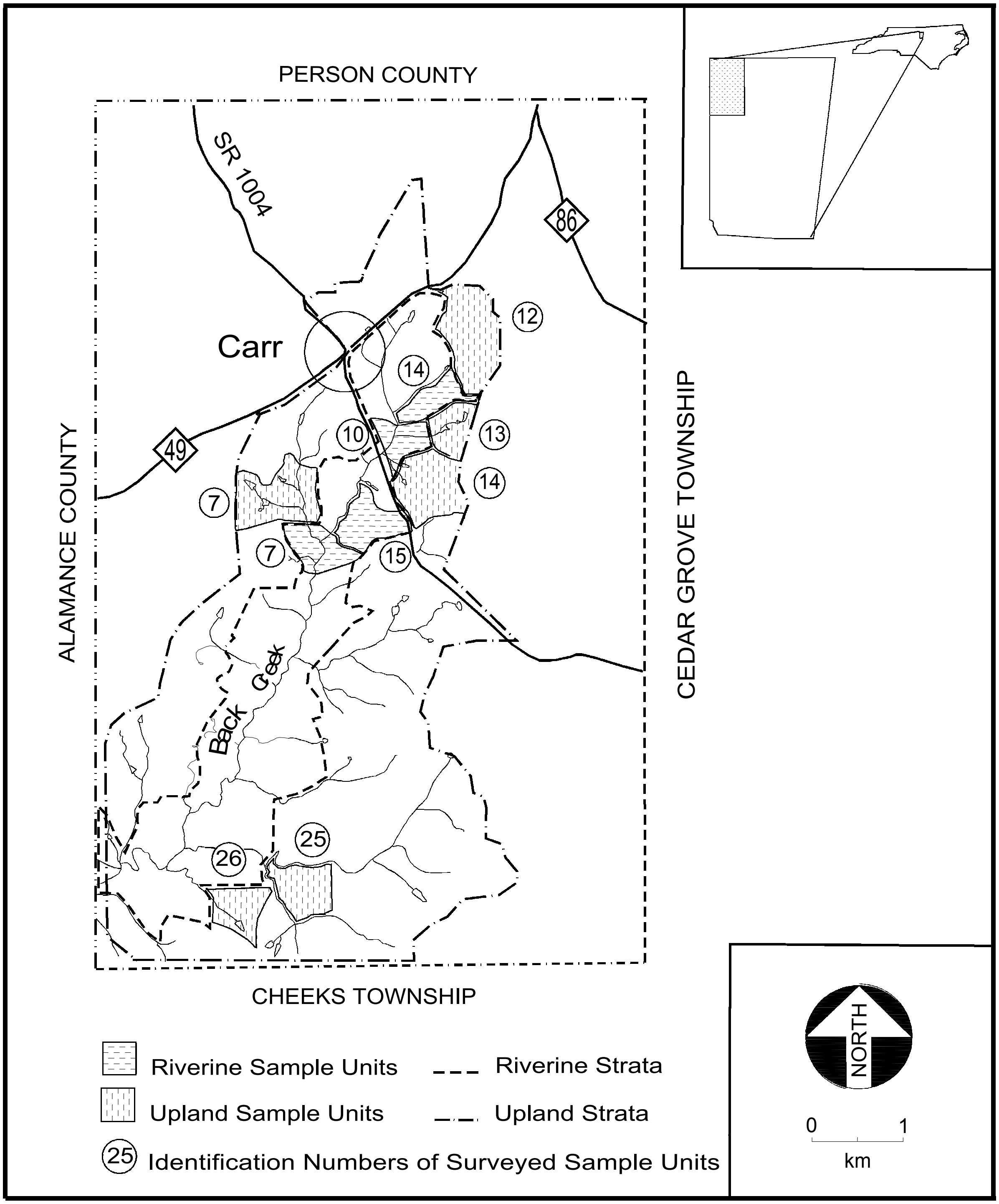

Figure 3.2. Locations of Back Creek sample units.

Table 3.2. Area Surveyed in Each Sample Unit.

Drainage: Stratum	Sample Unit Number	Area Surveyed (ha)
Little River:		
Riverine	5	8.5
	6	3.4
	10	13.8
	19	11.7
	29	13.1
	40	1.8
	53	4.1
	54	12.2
Upland	4	14.3
	21	8.2
	41	9.9
	63	14.0
Back Creek:		
Riverine	7	12.1
	10	3.0
	14	2.9
	15	2.2
Upland	7	13.1
	12	1.6
	13	3.8
	14	6.6
	25	19.2
	26	15.6

Table 3.3. Percentage of Each Stratum Surveyed.

Drainage: Stratum	Area (ha)	Area Surveyed (ha)	Area Surveyed (%)
Little River			
Riverine	2404.8	81.3	3.4
Upland	4900.1	33.4	0.7
Back Creek			
Riverine	729.1	20.1	2.8
Upland	1800.9	59.8	3.3
Total	9834.9	194.6	2.0

due to the rather wet winter, wash conditions were ideal throughout the fieldwork. A summary of the above data is provided in Appendix A.

Surface Collection Method

The method of surface survey was relatively straightforward: two crew members walked transects generally paralleling crops rows and recovered all artifacts observed within an approximate 1.5m width on either side of their path. The center lines of these transects were about 5 m apart. The locations of all recovered artifacts were then plotted on aerial photographs. Given the relatively large scale of these maps, provenience information was quickly and accurately recorded. Since artifact density was relatively low in most fields, individual artifact locations were often plotted. When individual provenience recording became too time consuming, however, artifacts were collected within a group and this location was plotted on the aerial photograph.

Regarding the spatial control of recovering artifacts, some attempt was made to associate the surface distribution of the recovered artifacts with a "site" in the conventional sense of the term. Such an assignment proved to be difficult in many, if not most, cases, since the recovered cultural material consisted of a few flakes widely scattered in a field. In these instances, attempts to spatially demarcate a site were based upon topographic features such as elevated areas or knolls in the field, or elevated areas near water. There were also a few cases of light but continuous artifact distributions that were more arbitrarily divided into "sites."

Given this limitation, this survey might better be regarded as "siteless" or "nonsite" in the sense that it represents the study of artifacts as they are distributed across the riverine and upland areas of a portion of Orange County (see Thomas 1975; Dunnell and Dacey 1983). From this perspective "the archaeological record is most usefully conceived as a more or less continuous distribution of artifacts over the land surface with highly variable density characteristics" (Dunnell and Dacey 1983:272). This approach was particularly useful in this study (as will be demonstrated in Chapter 5) since it allowed isolated finds and low density scatters to be more realistically organized into spatial patterns, without relying on a preconceived notion of what constitutes a site. Similar studies have proved particularly useful elsewhere in the Piedmont (House and Ballenger 1976; Goodyear et al. 1979) and the Southeast (Davis 1990).

Nevertheless, there were three instances where the spatial clustering of artifacts was clear enough that these locations would qualify as sites. Moreover, two of these cases were prehistoric sites (OR354 and OR345) that exhibited a sufficient density and number of diagnostic artifacts in a localized area such that surface collecting artifacts by transects was abandoned and an attempt was made to surface collect the entire site. A final instance included an historic site (Or333)--a recently razed early 20th century tenant house--in which artifact density was too great to collect, even within transects. In this case a simple *grab* sample was made. That is, an attempt was made to collect a few artifacts that were felt to be representative of the range of artifact types present on the surface.

JUDGMENTAL SURVEY

In addition to the probabilistic survey approach, a judgmental component was also included in the survey strategy. This strategy targeted areas of the county where, based upon prior knowledge, archaeological remains were known to exist or were likely to exist. These areas included bottomlands along the Little River, selected fields along Cane Creek, and areas within Duke Forest.

As mentioned above, inhabitable bottomlands within the county have produced relatively dense numbers of archaeological sites. Although few relatively wide expanses of floodplain exist within the survey region, one such area happened to fall within one of our survey units and produced one of the more significant sites (OR354) located during the survey (see Chapter 5). Four additional locations with a high potential were identified along the North Fork of the Little River near the eastern edge of the county by inspecting USGS topographic maps. Unfortunately, all of these areas were unsuitable for survey because they were either forested, in pasture, or fallow fields.

Cane Creek, a tributary of the Haw River, was also chosen for judgmental survey since it was located in the southern part of the county and has produced about two dozen recorded sites. Given the distribution of known sites and our impressions based upon several weeks of work in the northern part of the county, we selected two fields for survey along the northern portion of the river.

Finally, several tracts in Duke Forest were selected for survey because they were known to contain relatively well preserved remains of late 19th and early 20th century homesteads. As will be discussed in Chapter 5, these sites provided some structural data that was not preserved in the historical remains observed in the cultivated fields examined in the probabilistic survey.

SUMMARY

Due to the logistical constraints of the survey, a sampling strategy was used that, despite the limited coverage, provided fairly unbiased survey data. Similarly, field methods employing survey transects and the use of large scale maps allowed fields to be sampled relatively quickly and effectively while rapidly and accurately maintaining artifact provenience control. In addition, attempts were made to examine particular locations elsewhere in the county where prior work has revealed a high probability of locating additional sites. The results of this survey are presented in the following chapters.

Chapter 4

ARTIFACTS

This chapter describes the classification of the 2,912 artifacts recovered during the survey. The classification scheme is largely cultural-historical, which allows the recovered artifacts to be placed into the temporal sequence outlined in Chapter 2. Moreover, this classification also permits temporal and spatial comparisons to be made in county land use variability during the past (Chapter 5). Where appropriate, some inferences concerning functional differences among tool types are also made. The prehistoric artifacts are described first, followed by the historic artifacts.

PREHISTORIC ARTIFACTS

The prehistoric artifacts were classified into six broad groups: (1) points, (2) bifaces, (3) unifaces, (4) large chipped stone and cobble tools, (5) debitage, and (6) ceramics.

Points

A total of 95 points were recovered during the survey representing at least 15 different point types. They are presented in roughly chronological order.

Hardaway Side-Notched. Hardaway Side-Notched points are a relatively small, thin point identified by its small U-shaped side notches and recurved base which give it its "horned appearance" (Coe 1964:67). A single broken example of this point type is present in the assemblage (Figure 4.1:a). Only one ear and a small portion of the point's blade is present, however, the distinctive notch and ear are enough to identify the specimen. This point represents the earliest known component identified in the survey and would date to the latter part of the Early Archaic period.

Unidentified Side-Notched Points. Three broken side-notched points that, despite their condition, do not resemble any known cultural-historical type for the state are also present in the assemblage. One is very fragmentary and highly weathered; it retains enough of one lateral edge to detect a slight side-notch and a potion of one ear. It is possible that this specimen is a broken Hardaway Side-Notched point, but the portion of the ear that remains is proportionately large for that type (Figure 4.1:b).

The two remaining points, are similar to what collectors in the state sometimes refer to as "Rowan" points, named for the county in which they are apparently common (Figure 4.1:c-d). This type is described as "a small to medium size dart point with wide side notches and straight to concave base, ground bevelled on both faces" (Cooper 1970:113). The Rowan point is assigned to an Early Archaic association by Cooper primarily for two reasons. First, it has allegedly been excavated in two "poorly stratified" sites in the state and second, Rowan points share morphological similarities with the Big Sandy type in Alabama (Cooper 1970:114).

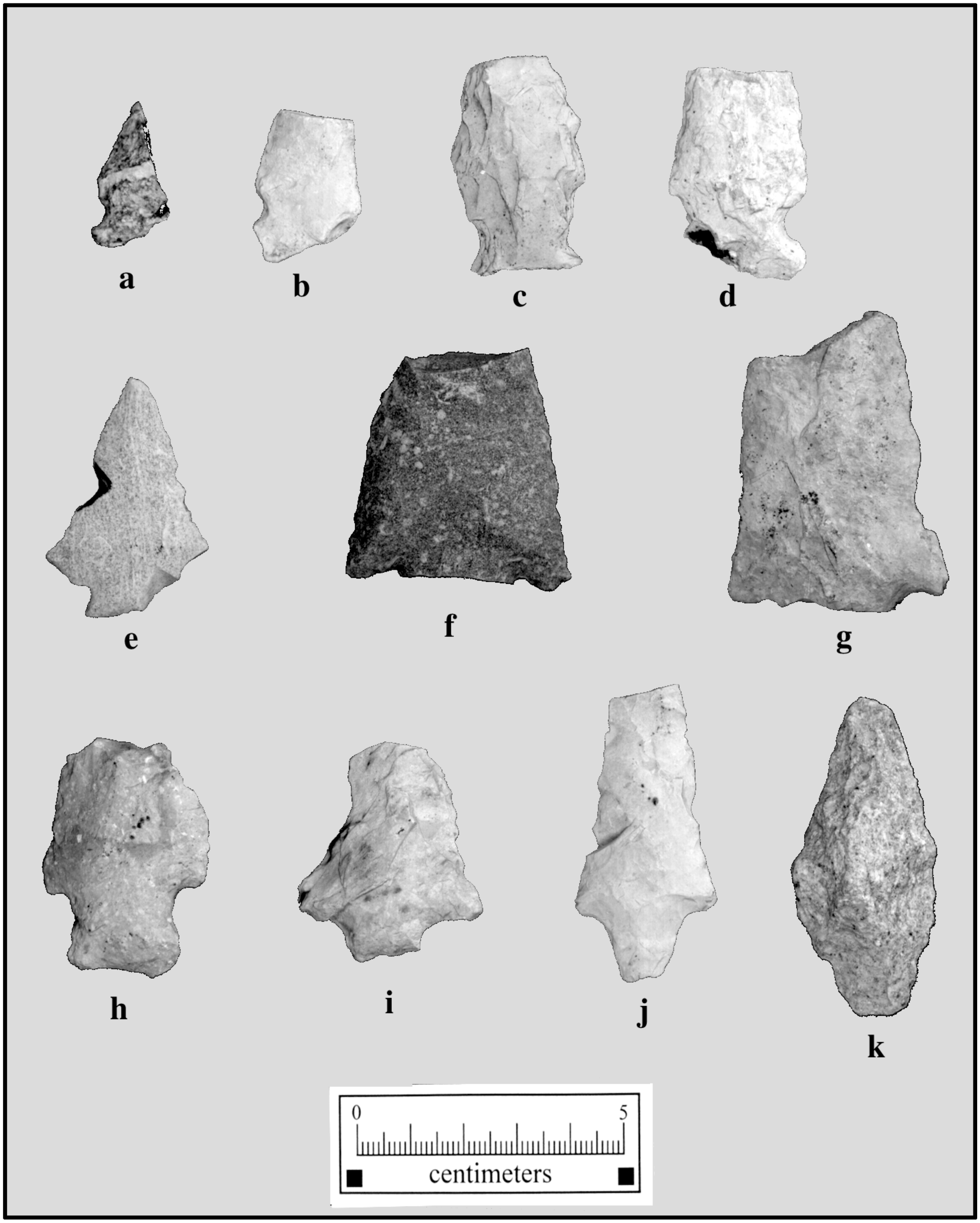

Figure 4.1. Selected Early and Middle Archaic points: (a) Hardaway Side-Notched; (b-d) unidentified side-notched; (e) Palmer Corner-Notched; (f-g) Kirk Corner-Notched; (h) Kirk Stemmed; (j-k) Morrow Mountain Stemmed.

As a side-notched point, Rowan points do resemble the Big Sandy type which has been found in Early Archaic contexts in Alabama (Dejarnette et al. 1962). Unfortunately, there is apparently no published work on the sites (in Rowan County?) where these points were allegedly found in Early Archaic contexts.

In any event, the two points in the assemblage here do appear to fit the type description. Both are missing their distal ends and portions of their bases. One exhibits distinct side notches with rounded ears and probably had a straight base. The second is more crudely flaked and exhibits very broad and shallow side-notches; the shape of its base cannot be determined. The temporal assignment of this type remains uncertain.

Palmer Corner-Notched. Palmer points are identified based upon their small size, small U-shaped corner notches, and a heavily ground and usually straight base (Coe 1964:67). Blade shapes are roughly triangular with straight to slightly excurvate blade margins that are commonly serrated and sometimes alternately beveled. The single example in the assemblage is broken, missing a portion of its shoulder and base (Figure 4.1:f-g). The blade is slightly beveled and the remaining portion of the base is heavily ground. The Palmer and Kirk Corner-notched points described below date to the Early Archaic period.

Kirk Corner-Notched. Kirk Corner-Notched points are morphologically similar to Palmer points, only larger (Coe 1964:69-70). The blade is triangular in shape with serrated and sometimes beveled edges. Bases are straight to slightly excurvate, and are distinguished from Palmer points by the absence of basal grinding (Coe 1964:70; but cf. Daniel 1994:73-77). The four examples recovered during the survey were all broken. Two were missing their tip and base, a third was missing most of its blade, and the last one was missing its tip. The latter two specimens, are somewhat unusual in appearance for Kirk Corner-Notched points due to their relatively narrow blade width. Indeed, this narrow width gives them a somewhat side-notched appearance, but this is probably due to extreme blade resharpening.

Indeterminate Corner-Notched. This category includes a single broken corner-notched point that, due to its broken base, could not be confidently identified as either a Palmer or Kirk point.

Kirk Stemmed. Kirk Stemmed points are characterized by a long relatively narrow blade that is often serrated and a broad stem (Coe 1964:70). The stem, which is relatively thick and expands slightly toward the base, was formed by broad "notching" of the point preform. A single example of this point type is present in the assemblage (Figure 4.1:h) and along with Stanly, Morrow Mountain, and Guilford points described below, mark the Middle Archaic period components in the survey.

Stanly Stemmed Points. This point type is characterized by a broad, triangular blade and a small, squared stem with an indented base (Coe 1964:35). The one specimen present in the assemblage has its tip and a portion of its base missing (Figure 4.1:i).

Morrow Mountain Stemmed. Morrow Mountain points are characterized by relatively broad to narrow triangular blades and a tapered stem (Coe 1964:37). Coe proposed two subtypes of this point based upon stem length relative to point length and the indention of stem margins. Differentiation between a Morrow Mountain I and a II based on those criteria, however, has proved to be somewhat subjective (cf. Claggett and Cable 1982:486-488; Goodyear et al. 1979:201). Of the seven specimens in the assemblage here, three might be classified as Morrow Mountain I and the remaining four as Morrow Mountain II. There is also a noticeable difference in the flaking quality among these points. While some are relatively thin and well made (e.g., Figure 4.1:j), others are less well flaked and are almost diamond-shaped in cross section (e.g., Figure 4.1:k).

Guilford Lanceolate. Guilford points are long, relatively narrow shaped points with little noticeable break in outline between the blade and base. Bases usually are slightly concave, although rounded and straight bases also occur (Coe 1964:43). Moreover, this point type is usually relatively thick in relation to its narrow width. Guilford points were the second most frequent point type in the assemblage (n=17). Three specimens are whole while the remainder represent basal or base and blade portions.

As with Morrow Mountain points, some qualitative difference can be seen in the form of these Guilford points. Some are very well made with distinct lanceolate outlines and almond-shaped cross sections (Figure 4.2:a-b). Other specimens, however, are larger and more poorly finished (Figure 4.2:c-d). A similar difference noted in Guilford points recovered in South Carolina has led some to suggest a functional distinction within this type. The better made forms may have been used as projectiles while the other group served as a cutting tool (Goodyear et al. 1979:206; Blanton and Sassaman 1989:67).

As noted by others (e.g., Goodyear et al. 1979:204) the discrimination between a Guilford point and a Morrow Mountain point with a heavily resharpened blade margin can be a subjective task.

Savannah River Stemmed. Only two examples of this Late Archaic point type were recovered during the survey (Figure 4.2:e-f). This is a large broad bladed point with a broad straight sided stem that is usually concave. The two specimens in the assemblage are roughly flaked. Both are broken; one is a haft and blade fragment while the other retains only a portion of its haft and blade. Both specimens also display poorly developed stems and shoulders and could be considered a "weak stemmed variety" of Savannah River point (Oliver 1981:120). Coe (1964:44) speculated that morphologically similar forms were knives rather than points.

Small Savannah River Stemmed. This group was the second most abundant point type recovered during the survey (n=11). It has been described as a smaller version of the Savannah River Stemmed (South 1959:153-157). This type has straight to slightly excurvate blade edges with a straight sided to slightly contracting stem. The base of the stem has been described as being straight to slightly excurvate (South 1959:156), but some specimens illustrated from the Doerschuk site exhibit slightly notched bases (Oliver 1981:182), as do several specimens in the assemblage here. Most of these points recovered during the survey are fairly well made (Figure 4.2:g-i). All but one specimen exhibits triangular, straight sided blades; the single exception exhibits excurvate blade edges (Figure 4.2:i).

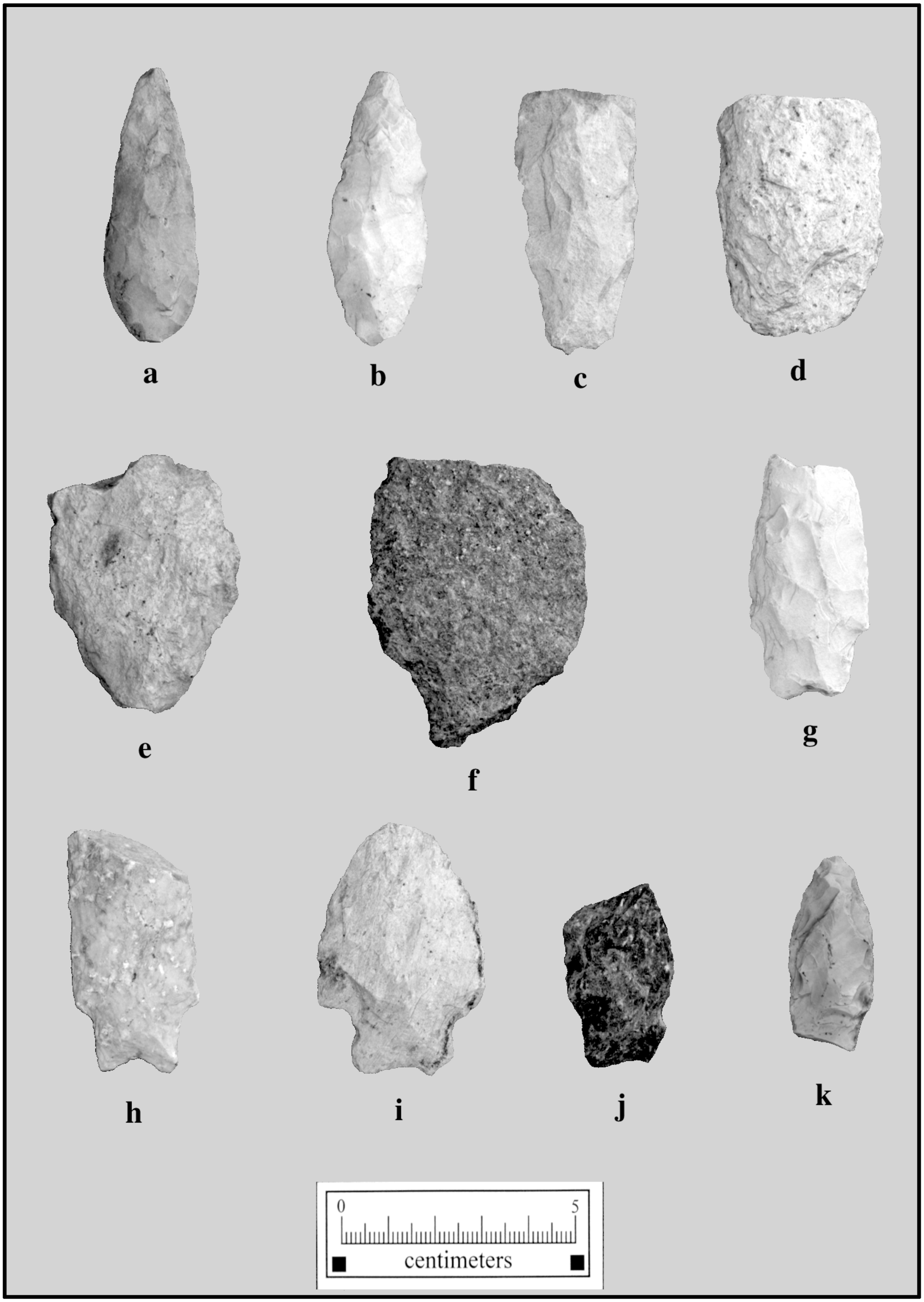

Figure 4.2. Selected Middle and Late Archaic points: (a-d) Guilford Lanceolate; (e-f) Savannah River Stemmed; (g-i) Small Savannah River Stemmed; (j-k) Gypsy Stemmed.

Gypsy Stemmed. This point type is described as having a small triangular blade with a square or rectangular straight stem that exhibits a slightly incurvate or excurvate base (Oliver 1981:188). As a small stemmed biface, it tends to resemble a Small Savannah River point, but is slightly smaller. The morphological similarity of Small Savannah River and Gypsy points is a reflection of their close temporal association, since Gypsy points probably post date Small Savannah River Stemmed points.

Nine small stemmed bifaces were classified as Gypsy points in the assemblage (e.g., Figure 4.2:j-k). Most specimens are fairly well made and only one is complete. Six points are missing some portion of their blade; one is missing a portion of its stem, while the last is represented by only its stem and a small piece of its blade.

Randolph Stemmed. Eight very small stemmed points have been classified as Randolph Stemmed. They are defined by a small, narrow, and thick blade, and a small, roughly tapered stem (Coe 1964:49-50). Moreover, the flaking is "exceedingly rough and crude" and often resembles a small version of a Morrow Mountain II point (Coe 1964:50).

While several specimens in the assemblage here do resemble small Morrow Mountain points (e.g, Figure 4.3:a), others do not (e.g., Figure 4.3:b-d). Rather, they have more distinctly shaped straight to slightly expanding stems, but otherwise are similar in size to the former group. This latter group, in fact, more closely resembles those points classified as Randolphed Stemmed from the Guthrie site (Ward and Davis 1993:24).

It should be noted that although Coe (1964:49-50) attributed this point to the Historic period (ca. A.D. 1720-1800), this dating has never been documented archaeologically. In fact, the recovery of three specimens from the Guthrie site suggests a much earlier Haw River phase (A.D. 1000-1400) association.

Swannanoa Stemmed Point. A single small stemmed point made of a dark bluish-gray chert was classified as a Swannanoa Stemmed point (Figure 4.3:e) (Keel 1976:196). This type closely resembles the Gypsy point in size and shape, although the Swannanoa tends to be the somewhat smaller on average than Gypsy points. However, the most distinctive difference between the two points is raw material type: Swannanoa points are almost always made of chert. The chert type here appears to be Knox chert from Eastern Tennessee. In fact, this point type was associated with the Early Woodland (Swannanoa) component (ca. 700-200 B.C.) at the Warren Wilson site in western North Carolina. Since this type was indigenous to the Mountain region, its recovery in the Piedmont is unusual.

Unidentified Stemmed Points. Two stemmed points in the assemblage could not be classified in any stemmed point category. The first is a medium-sized stemmed point with a broken blade. It might be classified as a Small Savannah River Stemmed, but it has an unusually long stem (Figure 4.3:f). This appearance might be deceiving, however, since the blade width appears to have undergone extensive resharpening leaving the point with weakly developed shoulders. In any event, this point probably dates to the Late Archaic.

The second small stemmed point is missing the distal portion of its blade. It features a unique haft form which was flaked by the removal of relatively wide side-notches leaving

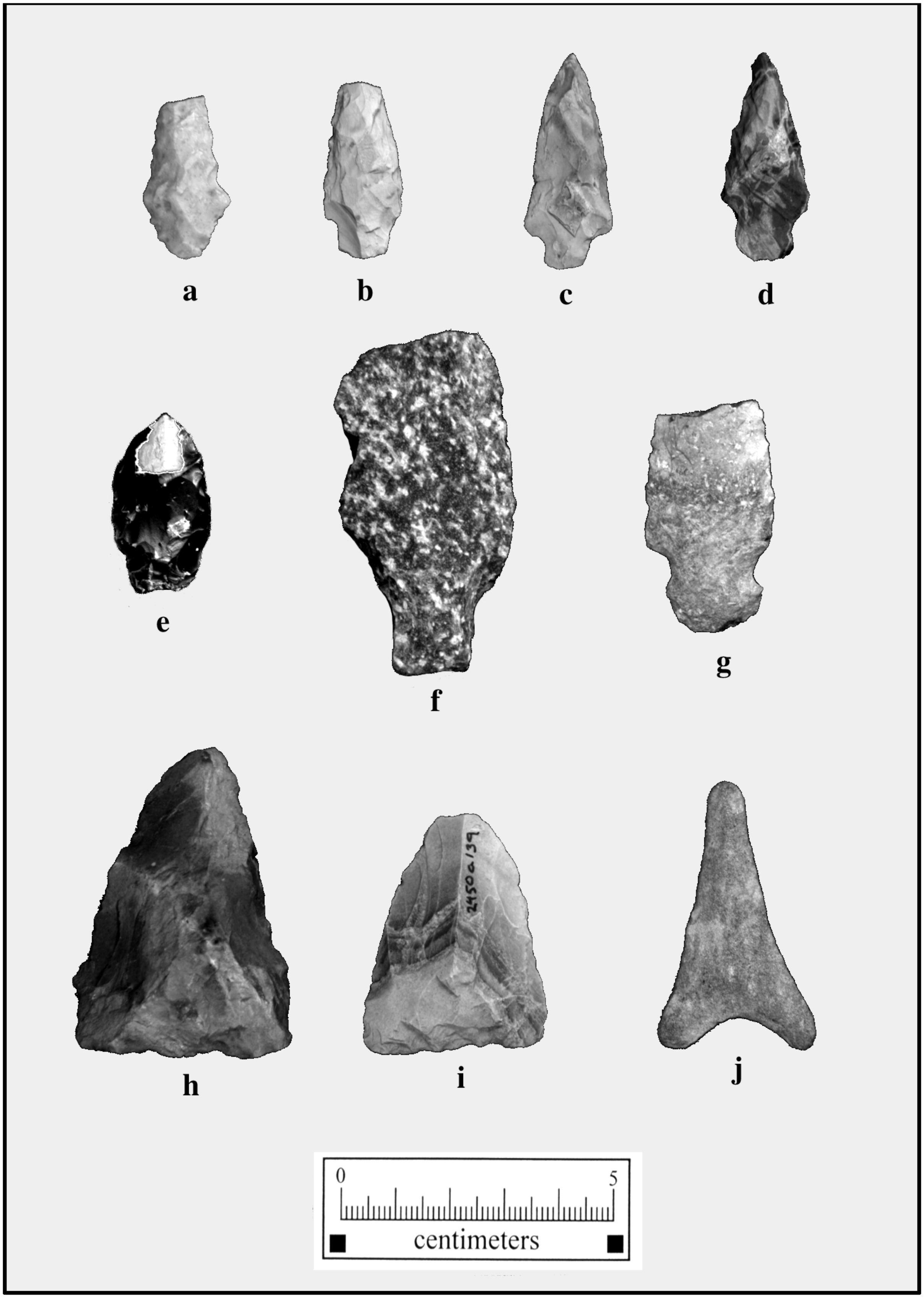

Figure 4.3. Selected Small Stemmed and Triangular points: (a-d) Randolph Stemmed; (e) Swannanoa Stemmed; (f-g) unidentified stemmed; (h-i) Badin Triangular; (j) Yadkin Triangular.

an expanded, rounded stem (Figure 4.3:g). A morphologically similar point is present in the lower Savannah River area and has been referred to simply as "Type C" by Charles (1981:28). He states that it probably dates to the Woodland period (Charles 1981:28).

Large Triangular Point. Four large triangular points are present in the assemblage that date to the Middle-Late Woodland periods. Three of these specimens are relatively thick and crudely flaked and resemble the Badin Crude Triangular type (Coe 1964:45), while the last one is thinner, if not more finely flaked, and resembles the Yadkin Large Triangular (Coe 1964:45). (Extreme weathering has all but obliterated any flake scars on this last specimen.) While there may be some evidence supporting the stratigraphic priority of Badin points (Coe 1964:45), some points of this type must almost certainly be Yadkin preforms.

Eared Yadkin. A single example of what is tentatively identified as an Eared Yadkin point is present in the assemblage. It is a small, thin, and finely flaked triangular point with a slightly concave, eared base. The blade, a portion of which is missing, is slightly excurvate in shape. Moreover, a distinct but shallow flute-like flake originates from the base on one side of the point (Figure 4.4:a).

This point shape resembles an eared variety of the large triangular Yadkin point. Although not formally defined, Coe (1964:Figure 42c) illustrates what he refers to as an eared variety of the otherwise triangular Yadkin type. The eared specimen recovered during this survey, however, is significantly smaller than the specimens illustrated by Coe. In fact, these small eared points more closely those points labeled "Paleo-Indian Transitional" by Phelps (1983:Figure 1.3). Although these points have not been found in stratified context, Phelps' temporal placement of these points is based upon apparent typological similarities to points identified as part of the "Dalton-Hardaway Sub-Phase" in Virginia by Gardner and Verrey (1979). Moreover, Phelps (1983:19) notes that the points from North Carolina share attributes of both Hardaway and Palmer points and he suggests that they may represent a Coastal Plain variant of the Hardaway Side-Notched point more commonly found in the Piedmont.

At the risk of belaboring this discussion over a single artifact, the specimen recovered here and those pictured by Phelps are also morphologically similar to apparent Dalton manifestations elsewhere in the Southeast along the central and western Gulf Coastal Plain (Ensor 1986). These are the San Patrice and related types found in Louisiana and east Texas (Webb 1946; Webb et al. 1971). In particular, the specimens from North Carolina are morphologically similar to a variety of San Patrice known as St. Johns which is a small triangular shaped point that exhibits a slightly eared base. Similar points have also been found in Mississippi (Brookes 1979) and Alabama (Ensor 1985).

Small Triangular Points. A total of 22 small triangular points are present in the assemblage (e.g., Figure 4.4:b-e). Most of these points are relatively thin and well flaked and would conform to the Caraway Triangular (Coe 1964:49). The points recovered here display a straight to slightly concave base with straight-sided blades.

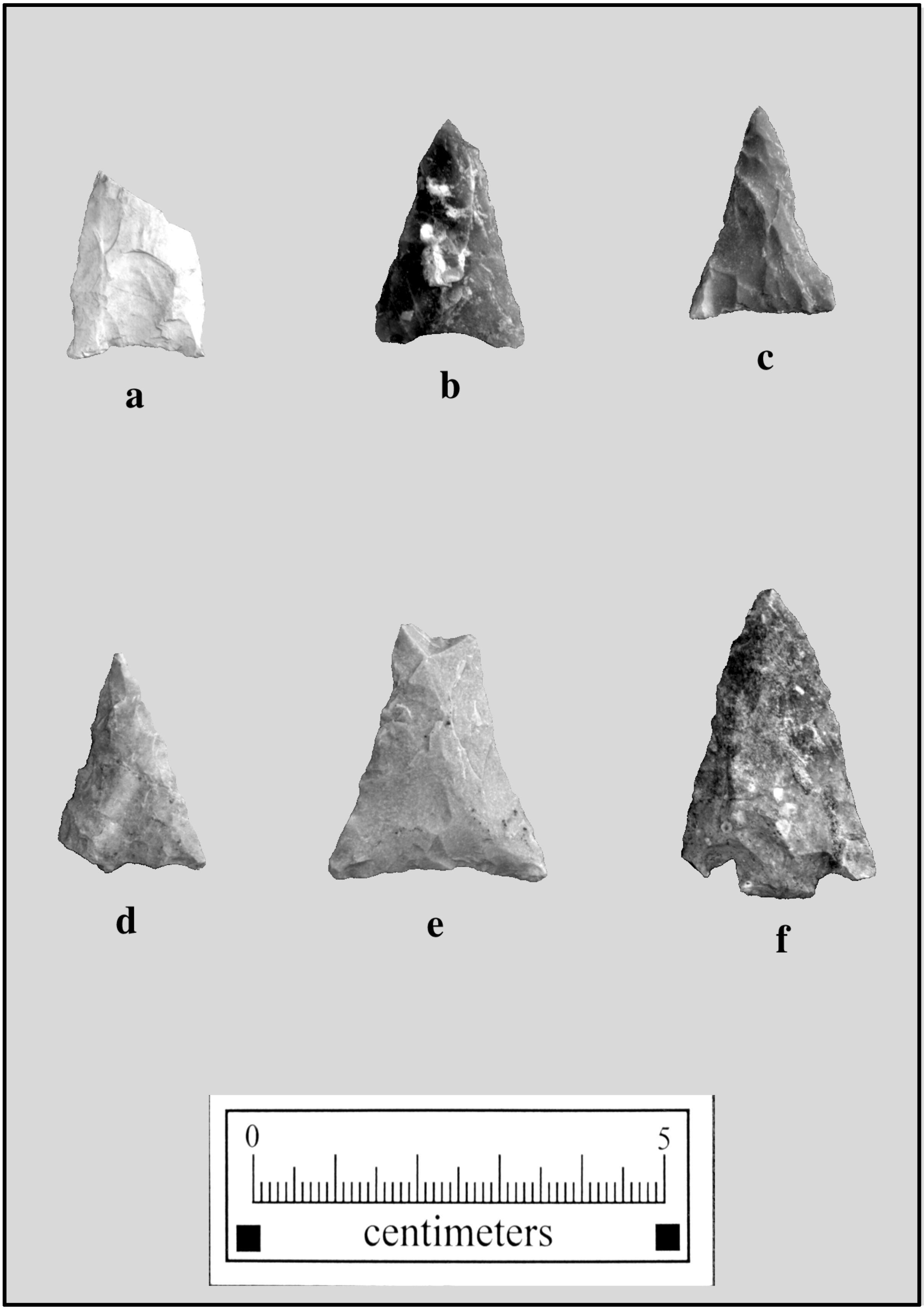

Figure 4.4. Triangular points: (a) Eared Yadkin; (b-e) Small Triangular;
(f) unidentified triangular.

Unidentified Triangular. One medium sized, basally notched triangular point is present in the assemblage (Figure 4.4:f). It is distinguished from the other triangular points by the presence of two shallow but distinct notches along the point base. The point base is slightly excurvate while both lateral edges are straight-sided.

Although rare, a similar point type occurs in the Coastal Plain of South Carolina along the Savannah River (Charles 1981:39). Charles (1981:39) compares this type to the basally notched triangular Hernando point in Florida (Bullen 1975:24) which has an Early Woodland association. A similar temporal association seems appropriate for the example recovered here.

Indeterminate Point Fragments. This category included 35 point fragments that lacked diagnostic features and thus could not classified into any known type. The majority of this category included point tips. Judging from the size and flaking patterns on these fragments most of them probably belonged to some Middle to Late Archaic stemmed point type.

Bifaces

Bifaces (n=62) include a variety of roughly oval to somewhat amorphous shaped artifacts with flaking patterns on both faces of at least one margin of the tool (Figure 4.5). The flaking pattern can be highly irregular to uniform and are generally biconvex in cross-section. Many of the specimens are broken suggesting their discard at the point of reduction failure. Most of these specimens probably represented blanks or bifacial cores. Thirteen of these items, however, might be referred to as preforms in the sense that their relative thinness and symmetry would suggest a near completed point form. Alternately, some items may represent finished tools and used, for example, as knives.

Unifaces

Unifaces are small chipped stone tools characterized by the presence of intentional flake removal primarily along one or more margins of an artifact edge.

Type I End Scrapers. Type I End Scrapers are a small, triangular to dropshaped tool with well executed retouch along the distal and sometimes lateral edges of the tool (Coe 1964:73-76).

Six of these end scrapers were recovered during the survey (e.g., Figure 4.6:a-c). Three tools display some additional features common to this type: at least two specimens exhibit graver spurs along their lateral edges next to the bit (e.g., Figure 4.6:b), while another displays at least one "hafting notch" along one lateral edges (Figure 4.6:c). Moreover, this latter tool also displays a graver spur that is located in an unusual location on the tool; the spur was placed at the corner of one of the lateral edges opposite the bit. That is, the spur is located at the proximal end of the tool at a location that is generally regarded as the hafted portion of the tool (Keeley 1982). Therefore, spur placement must have taken place after it was removed from the haft, probably at a point when the scraping edge of the tool was exhausted. At that point the graver spur was flaked, the tool was used and then presumably the tool was discarded.

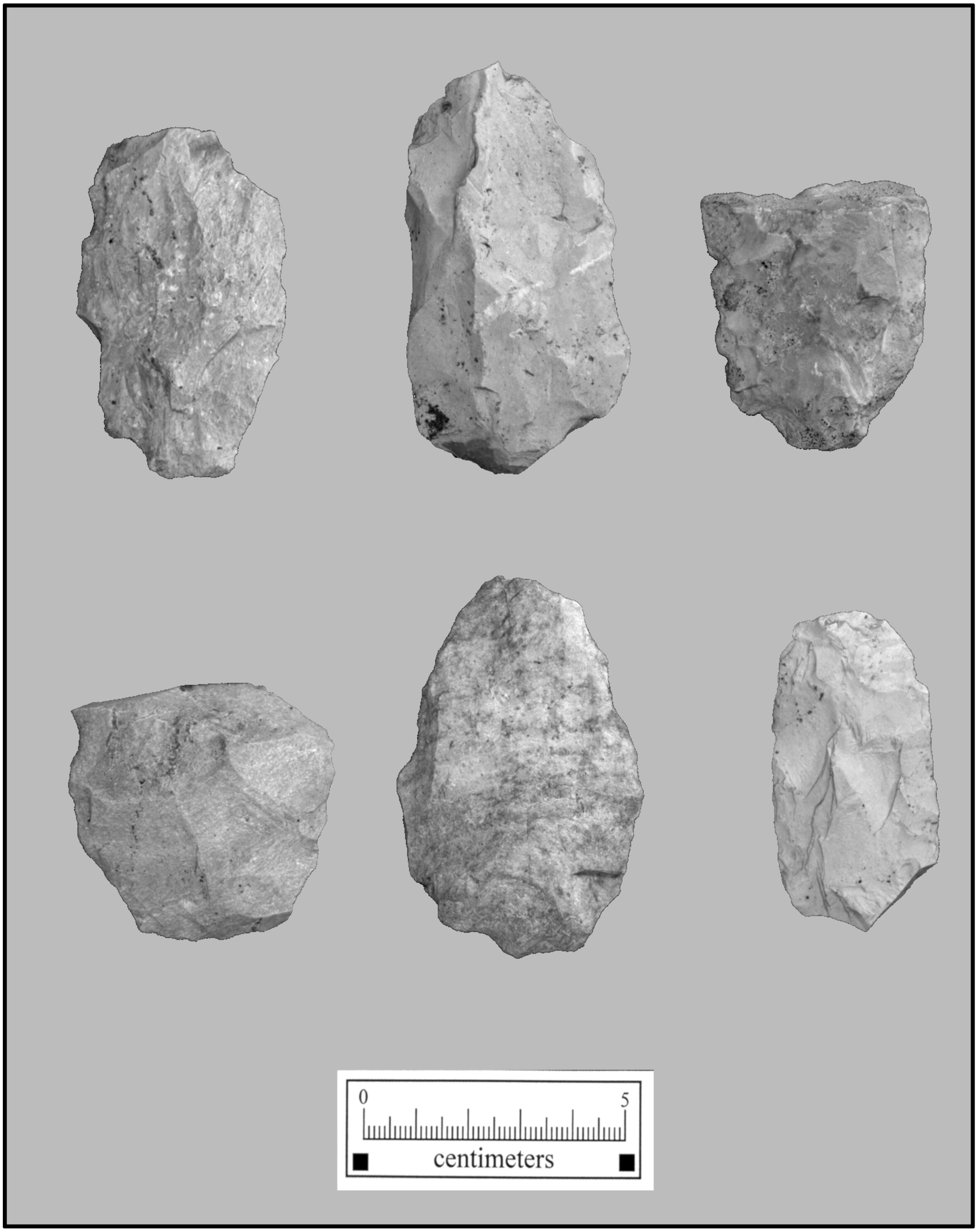

Figure 4.5. Selected Bifaces.

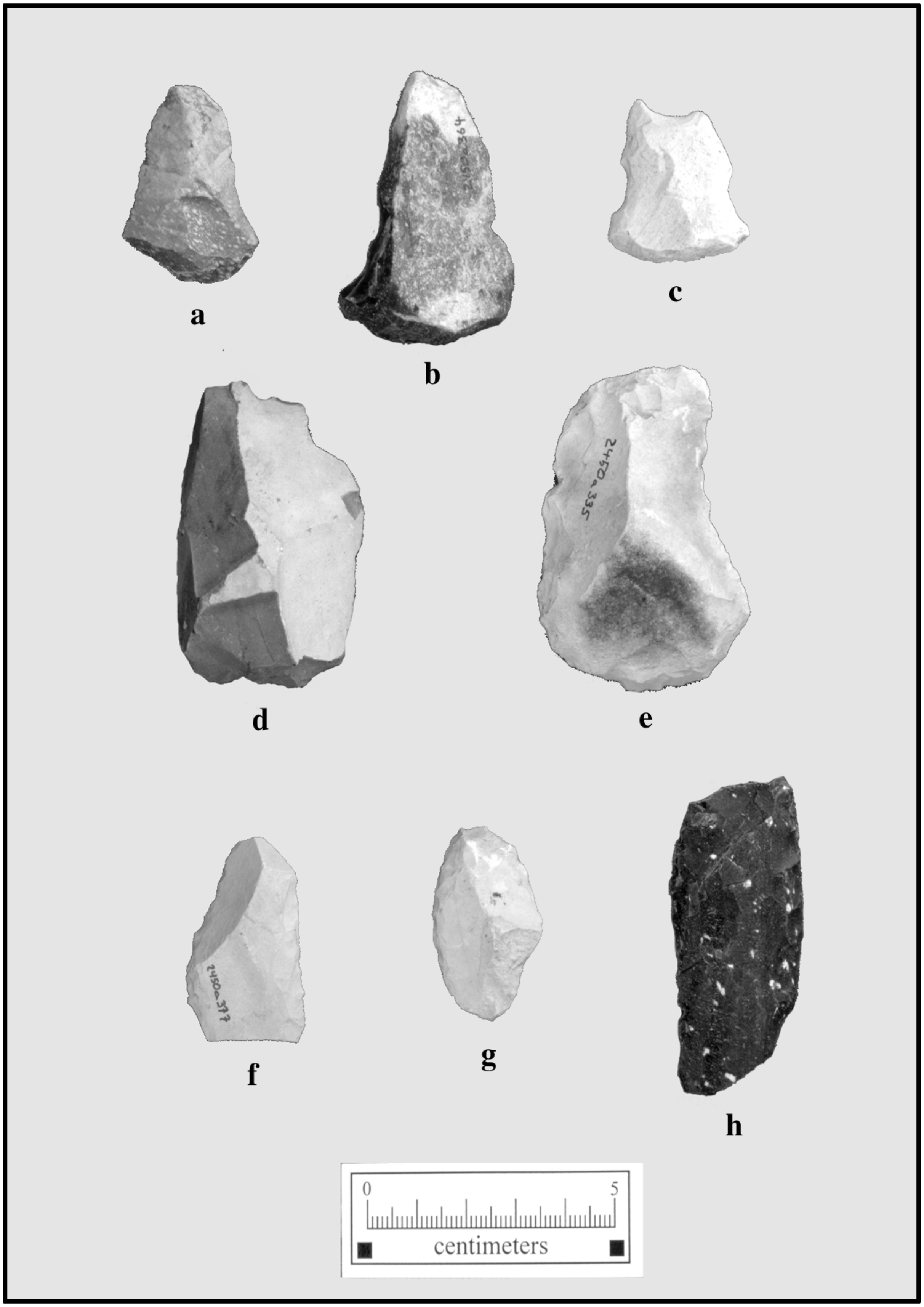

Figure 4.6. Selected Unifaces: (a-c) Type I End Scrapers; (d-e) Type II End Scrapers; (f-h) Side Scrapers.

This end scraper type has long been associated with both the Paleoindian and Early Archaic periods. For instance, Type I End Scrapers were particularly abundant in the lower zones at the Hardaway site (Coe 1964:73-76; Daniel 1994:Table 2.3) and were also present in the lower levels of the Haw River sites (Claggett and Cable 1982).

Type IIa End Scrapers. Three examples of a large, less formalized end scraper are also present in the assemblage (e.g., Figure 4.6:d-e). Type IIa End Scrapers were made on relatively large, thick flakes and exhibit less extensive and less well executed unifacial retouch (Coe 1964:76). This end scraper type was also present in the Early Archaic component at the Hardaway site (Daniel 1994:97-100), although it is not exclusively associated with it (Coe 1964:76).

Type IV Side Scrapers. Two broken examples of this formalized side scraper were identified in the assemblage. This is a previously unrecognized tool type that has been recently identified in the Early Archaic component of the Hardaway site. It is a relatively large tool that is characterized by the presence of two worked edges--one unifacial edge and one bifacial edge. The former edge is interpreted to represent the tool bit, while the latter edge is interpreted to represent tool thinning for hafting purposes. These tools were probably used in a draw knife-like fashion in heavy duty scraping activities (Daniel 1994:124-130). The two specimens recovered here are both end fragments, exhibiting portions of both the bifacial and unifacial edges just described.

Other scrapers. Eighteen other less formalized unifacial scrapers are included in this category (e.g., Figure 4.6:f-h). These flakes or chunks all have unifacial retouch applied to at least one tool edge. Little attempt appears to have been made to regularize tool shape beyond the area of the working edge. However, there is variability in the mode of retouch among these tools. Some retouch is well done and continuous along the flake edge, while in other cases the mode of retouch is less well executed. In the former case some of these tools might be classified as Type II or Type III Side Scrapers (Coe 1964:79).

The temporal placement of these tools is difficult to assess. While some may date to the early Holocene, many others may not. Flake tools, albeit less well made specimens, were made throughout the Archaic period. At least one specimen, though, exhibits a mode of retouch that is suggestive of an early Holocene assignment (Figure 4.6:h). It is blade-like flake with steep, well executed, continuous retouch along one lateral edge; the opposite edge also exhibits some flaking, but this modification appears to be more the result of use than intentional retouch. Presumably, this and the other unifacial tools were used for various scraping and cutting activities.

Drills. Three possible drill fragments were recovered during the survey. Two fragments probably represent the basal portion of drills (Figure 4.7:a-b). Both items exhibit unifacial and some bifacial retouch that shapes the lateral edges of each flake as well as what appears to be the beginnings of a rod-like projection that presumably snapped during use. The final item appears to be a broken drill bit. It exhibits careful bifacial retouch forming a rod-like shape. Presumably, these tools were used to bore holes in dense materials.

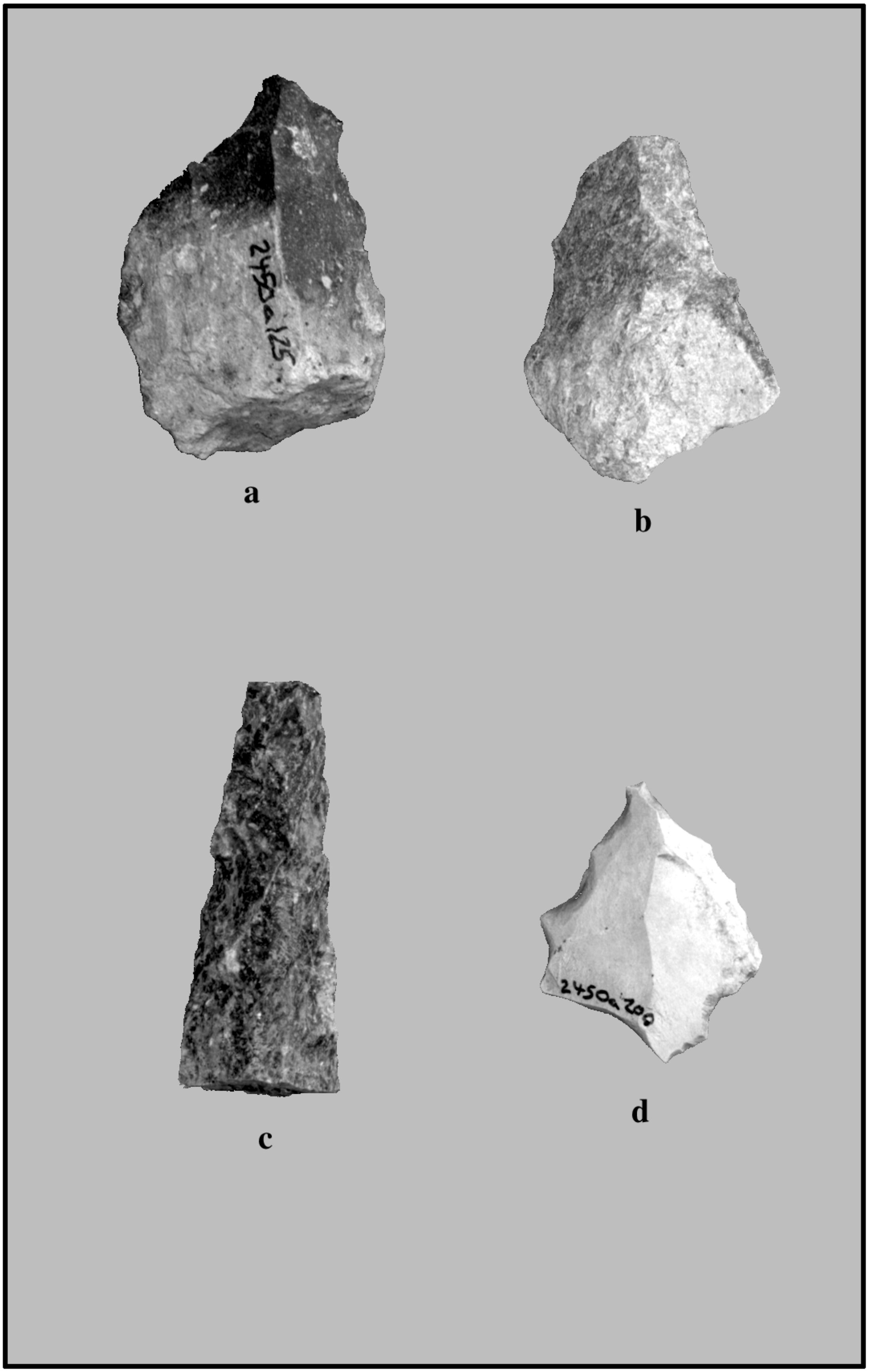

Figure 4.7. Drills and Graver: (a-c) drills; (d) graver.

Gravers. One flaked graver was identified in the assemblage (Figure 4.7:d). It was made on a medium-sized flake with careful retouch forming a small projection, the tip of which is broken. Although graver spurs are not exclusively associated with early Holocene assemblages, this tool type was present in the early component at Hardaway (Daniel 1994:138-139) and it is a common type in many such tool kits in the Southeast (e.g., Goodyear 1974).

Large Chipped Stone and Cobble Tools

This category includes three types of large bifacially flaked tools other than the bifaces described above. It also includes tools that show evidence of battering or pitting.

Choppers. Two large roughly chipped stone tools made of a somewhat coarse-grained metavolcanic rock have been identified as choppers. They are oval-shaped, and have bifacially flaked margins with marked sinuous edges. Moreover, approximately one-third of its edge, opposite the broadest portion of the tool, was unworked as if to provide some backing. While these objects could have been bifacial cores, their interpretation here as choppers rests on the coarse quality of the stone (i.e., it does not appear to flake well) and the nature of the battering along the bifacial edges. This battering appears to be more the result of use than platform preparation for the removal of flakes.

Guilford axes. A single example of a small chipped stone axe that is commonly referred to as a Guilford axe (Coe 1964:113) was recorded as an isolated find (Figure 4.8:a). It is highly weathered and was roughly bifacially flaked on a fine-grained greenstone (?). It has broad convex bit typical of these tools and broad shallow notches on both lateral edges. This tool type was found in association with Guilford hearths at the Gaston site.

Chipped Stone Hoe. A chipped stone hoe fragment was identified in the assemblage (Figure 4.8:b). Hoes are large, roughly flaked, hafted tools that were used for digging and cultivating crops; they are commonly found in late prehistoric sites in the Piedmont (Ward and Davis 1993:Figures 6.20 and 7.32). The fragment here is a lateral edge that is heavily ground.

Hammerstones. Three cobbles and one other utilized stone mass exhibited battering and pitting on their surfaces indicative of their use as hammerstones. This category included two whole quartz cobbles, one broken quartz cobble, and one metavolcanic stone mass. Presumably, these tools were used as percussors in stone tool production. Moreover, one of the whole cobbles also appears to have been used as an anvil; it is disc-shaped and has slight pitted depressions on each of its two flat surfaces. The metavolcanic specimen is roughly spherical and exhibits both flake scars and battering over its surface. It appears to have been a core that was recycled into a hammerstone.

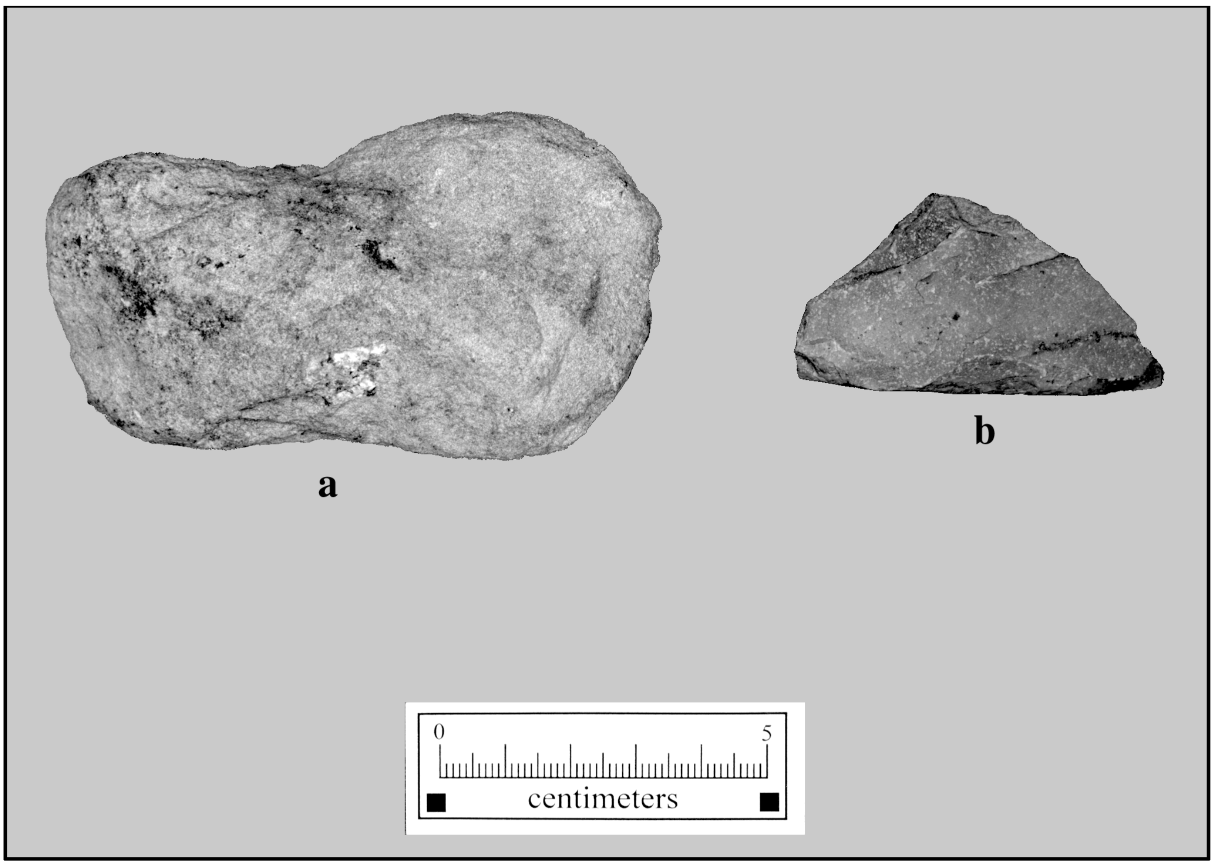

Figure 4.8. Selected Large Chipped Stone Tools: (a) Guilford axe; (b) Chipped stone hoe fragment.

Debitage

Excluding tools, this category includes all the byproducts of chipped stone tool manufacture. This category was, by far, the most prevalent artifact type recovered during the survey.

Cores

Cores are stone masses exhibiting at least one and usually more flake scars. Presumably, these cores were used to derive flakes for purposes other than bifacial tool manufacture (e.g., flake tools). Four morphological types were distinguished.

Block Cores. Fourteen of these cores are medium to large sized, blocky, irregular shaped flakes or masses that exhibit random flake removal.

Conical Cores. Six conical to semiconical shaped cores are present in the assemblage. Four of these items approach a conical or pyramidal shape and are relatively small. Moreover, the flat or striking surface on these specimens exhibit some flaking which has resulted in a bifacial edge around the circumference of the core. Presumably this flaking was done to maintain the striking platform during reduction. The other two cores are larger and more semiconical in shape. They too, display some flaking on their striking surface.

Pièces Esquillées. Two pieces of quartz crystal, which appear to have been bipolarly flaked and morphologically resemble *pièces esquillées*, are also present in the assemblage (cf. Hayden 1980). They are small and thin and exhibit crushing along most of their edges.

The function of *pièces esquillées* is the subject of some debate. The traditional interpretation favors their use as wedges on hard organic materials (Hayden 1980; Lothrop and Gramly 1982), while others (Goodyear 1993) have interpreted them to have functioned as cores for the production of flakes for tools. The functional identification of the single specimen recovered here, of course, is somewhat moot.

Nevertheless, it is important to note that *pièces esquillées* have been frequently recovered in early Holocene assemblages in the eastern United States. In particular, it is interesting to note that a previously unrecognized bipolar industry on quartz crystals has been identified in the Hardaway site assemblage including a few examples of crystal *pièces esquillées* (Daniel 1994:142-146). As such, the specimen recovered in the survey may be another example of an early Holocene tool type.

Biface Thinning Flakes. These flakes are assumed to have been removed during the process of biface manufacture or resharpening (n=1,139). No one attribute characterizes these flakes, but they are relatively flat to slightly curved in profile, with a tendency to feather out at the flake margins. Moreover, they exhibit shallow flake scars on their dorsal surface as a result of the previous removal of other thinning flakes. Striking platforms, if present, usually have a low angle and display faceting or grinding. No distinctions were made between whole and broken specimens.

Other Thinning Flakes. This is a residual flake category for all flakes that could not be identified as biface thinning flakes or shatter (see below) (n=929). They may represent a variety of tool or core reduction processes excluding biface thinning or they may represent a stage very early in the biface reduction process. Moreover, many of these were small broken specimens which, while lacking identifiable bifacial attributes, may represent fragments of bifacial thinning flakes. No distinctions were made between whole or broken specimens.

Shatter. Shatter are angular pieces of debitage of various sizes that are distinguished from flakes by the absence of observable striking platforms, dorsal and ventral surfaces and other flake characteristics (n=46). They are distinguished from cores by the lack of flake scars.

Ceramics

A total of 95 prehistoric ceramic sherds were recovered during the survey, the vast majority of which came from one site (OR354). All ceramics were classified according to the established types for the region.

Haw River Net Impressed. A total of 24 coarse sand tempered sherds displayed knotted net impressions and were classified in this category (Ward and Davis 1993:65-66). Although most sherds were highly eroded, faint impressions of the coarse knots could be detected (e.g., Figure 4.9:a-b). Exterior sherd color ranges from brown to dark reddish brown. Interior sherd colors display similar colors, although a few also exhibit a very dark gray. Most interiors also appeared to be scraped, but weathering tended to obscure this treatment. This total also includes a single rim sherd which displays v-shaped notches on the lip/rim margin. Haw River Net Impressed ceramics date to the latter half of the Haw River phase (A.D. 1300-1400).

Haw River Cord Marked. Four coarse sand tempered, cord marked sherds were assigned to this type (e.g., Figure 4.9:c-d) (Ward and Davis 1993:67). All sherds have reddish brown exterior and interior surfaces and their interiors were also scraped. This ceramic type also dates to the last half of the Haw River phase.

Hillsboro Simple Stamped. Twelve sherds were recognized as having simple stamping as the surface treatment (Coe 1951:311; Wilson 1983:342-366). Although these sherds were also eroded, a parallel series of lands and grooves could be detected on their surface (e.g., Figure 4.9:e-h). They are all coarse sand tempered. Exterior and interior surface color ranges form reddish brown to light gray. Slight evidence of interior scraping was observed on only one sherd. The Hillsboro phase encompasses the period when initial European contact was made with native aboriginal groups (A.D. 1400-1600) (Ward and Davis 1993:410-413).

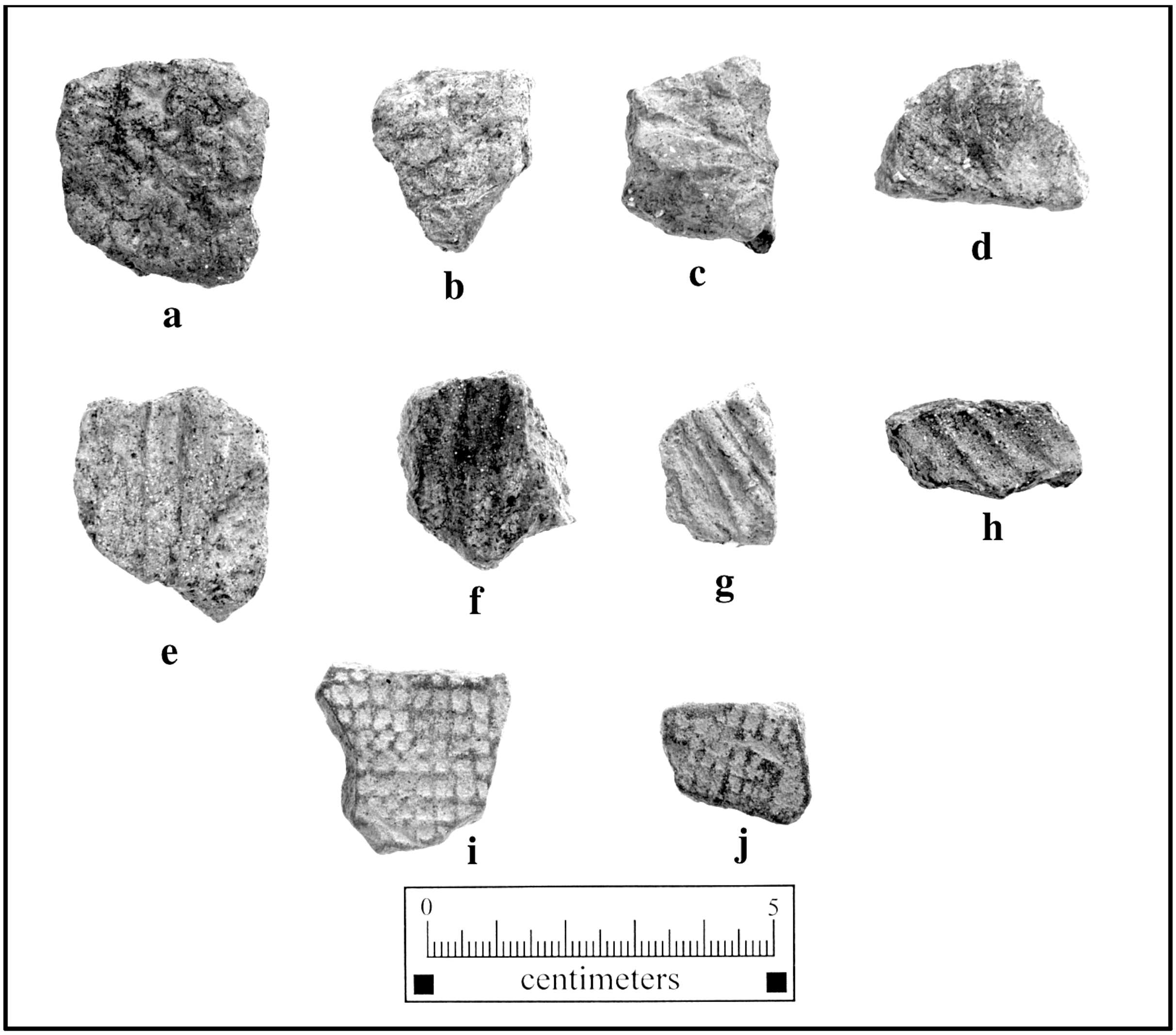

Figure 4.9. Selected Prehistoric Ceramics: (a-b) Haw River Net Impressed; (c-d) Haw River Cord Marked; (e-h) Hillsboro Simple Stamped; (i-j) unidentified check Stamped.

Check Stamped. Two sherds exhibited distinct small check stamped patterns with fine sand tempering (Figure 4.9:i-j). Although the checks are too small to be classified as Fredricks type, the paste resembles other late period sherds (Steve Davis, personal communication 1994).

Indeterminate Sherds. A majority of sherds (n=55) recovered during the survey were either too weathered or too small to be reliably identified as to exterior surface treatment. Two of these are rim sherds with flattened lips, one rim form is slightly everted. Since they are all sand tempered and most (n=46) came from the same site (OR354), they are probably attributable either to the Haw River or Hillsboro occupation there.

HISTORIC ARTIFACTS

The historic period artifacts were sorted into functional groups adapted from South's (1977:92-102) artifact classification format including: (1) Kitchen Artifact Group, (2) Architectural Artifact Group, (3) Activities Group, (4) Personal Group, (5) Miscellaneous Group, and (6) Faunal Remains. The vast majority of the historic artifacts fell into the first two categories.

Kitchen Artifact Group

The Kitchen Artifact Group represents those artifact classes related to subsistence activities including food preparation, consumption, and storage. Two artifact classes dominate the assemblage: ceramics and container glass.

Three basic ceramic wares were identified in the assemblage: earthenware, stoneware and porcelain. Technologically, these ceramic wares follow a continuum of variation beginning with a low-fired permeable body earthenware ending with a vitrified porcelain fired under high temperatures. Numerous glass fragments representing various bottles and jars and a few complete or near complete glass bottles were also recovered during the survey.

Whiteware. Whitewares were the predominant pottery type in the historic assemblage (n=120) (e.g., Figure 4.10:a-c). This is a white glazed earthenware with a permeable body (i.e., sherd edge sticks to the tongue) with irregular broken edges (Pittman 1983:22; Worthy 1982). Moreover, sherd cross-sections exhibited a distinct boundary between the body and glaze. Four sherds displayed some decoration including either decal, transfer printing, flow-blue, or blue shell-edging. Whitewares post date 1820.

White Ironstone. This white bodied type is a fine-grained vitrified pottery (i.e., the sherd edge does not stick to the tongue), with a glaze that rarely crazes. Only ten examples of this type were identified in the assemblage. This type post dates 1845 (Pittman 1983).

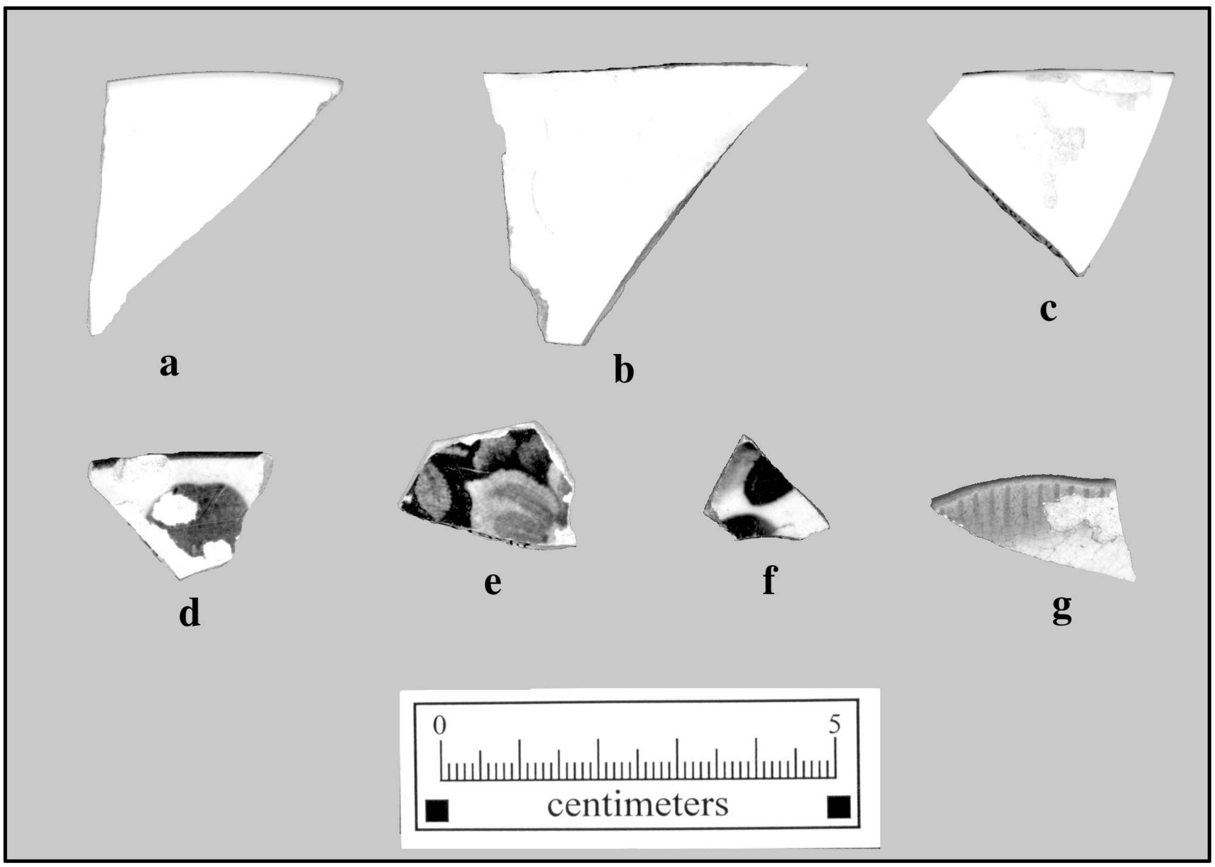

Figure 4.10. Selected Historic Ceramics: (a-c) whitewares; (d-g) pearlwares.

Pearlware. Six small sherds were identified as pearlwares. This type is characterized by a bluish tinted glaze which is often difficult to distinguish from whitewares. Pearlwares tend to craze, forming numerous fine cracks in the glaze. Moreover, the glaze often spalls off the surface. Five of the sherds recovered here were decorated; two were hand painted (Figure 4.10:d,f), one was green shell-edged (Figure 4.10:g), one a blue transfer-print (Figure 4.10:e), and the last an annular pearlware. These sherds are the earliest historic wares recovered during the survey (circa 1780-1830) (South 1977:12).

Lustreware. A single small sherd was identified as a lustreware (Pittman 1983:27). It is an earthenware with a lustrous brown and white hand painted exterior and white interior. It ranges in date from 1790-1850 (Pittman 1983:27).

Coarse Earthenwares. Two sherds that can only be described as coarse earthenwares are present in the assemblage. One has a reddish brown body and a very weathered brown glaze, much of which has spalled off of both the interior and exterior surfaces. The second sherd also has a reddish brown body but lacks any glaze on the exterior surface. The interior surface, however, has a weathered brown glaze or slip. These sherds may date as early as the late 18th century.

Yellow Ware. Yellow wares are yellow-buff colored earthenwares. The two examples identified in the assemblage include one sherd with an annular yellow and brown exterior and a yellow interior. The second sherd has a yellow and white annular exterior with a yellow interior. This type post dates 1820 (Pittman 1983:23).

Creamware. Two small cream-colored sherds were identified in the assemblage as creamware. They probably date from the late 18th to early 19th centuries (Pittmann 1983:21).

Stoneware. Three types of stonewares were identified in the assemblage: a salt-glazed (n=15) and alkaline-glazed (n=7), and a molded art deco (n=5) stoneware. The salt-glazed and alkaline-glazed sherds are light grey to light brown in color and are dense, granular, and thick in cross-section. With a single exception--a ginger beer bottle fragment--these sherds appear to have been from crocks and would date to the nineteenth or early twentieth century. The molded art deco stoneware consists of 5 refitting sherds from a mixing bowl. It is light blue in color and is otherwise similar in composition to other stonewares. This stoneware dates to the early 20th century (Trisha Samford, personal communication 1994).

Porcelain. Five porcelain sherds, two portions of a mustache cup, and one very small porcelain saucer were recovered during the survey. This type has a translucent white surface and is highly vitrified so that no boundary exists between the body and glaze when viewed in cross-section. One sherd exhibits transfer-printing. All the porcelain sherds in the assemblage would post date 1800.

Glassware. Only two glassware items were represented in the assemblage, a glass handle and a glass dish fragment that probably belong to two condiment dishes.

Container Glass. A total of 159 fragments of various glass bottles and jars comprised the largest glass category. These fragments were then sorted by color. The vast majority of the glass was clear and colorless (n=91), although several colored pieces were present including amber (n=2), light blue (11), dark blue (n=4), light green (n=28), dark green (n=5), purple (n=11), and opaque white (n=8). Although no attempt was made to quantify the various types of containers present in the assemblage, several functional categories appeared to be present including medicine or panel bottles, and spirit and soda bottles. In addition, fragments of cosmetic and preserving jars were also represented in the assemblage.

Finally, several complete or near complete bottles were also recovered during the survey. These artifacts included two complete spice bottles, one half-pint milk t the two spice bottles, all bottles were recovered in Duke Forest.

Architectural Artifact Group.

This group includes items associated with the architecture of any structure. Artifacts classified in this group include clear window glass fragments (n=23), nails (n=2), and brick fragments (n=3). Several flat clear pieces of window glass were also recovered (n=23).

Activities Artifact Group

This Activities group comprises a number of artifact types that represent a wide range of cultural behaviors. Activities representing this group in the assemblage included toys (a marble, a porcelain doll's head fragment, and a toy tire), a fragment of a phonograph record, a metal hook, and fragments of three ceramic and one glass insulator.

Personal Artifact Group

The Personal group is represented by those items which are carried in pockets, worn as ornamentation, or used as ornamentation. Only three such specimens were identified in the assemblage including a pocket comb, a glass pendant (?) and a fragment of a plastic razor handle.

Furniture and Furnishings Artifact Group

This group includes furniture parts or hardware, and home furnishings. Artifacts identified in this group include portions of two ceramic figurines, a broken glass ashtray, and a glass candlestick holder.

Miscellaneous Plastic

Six pieces of unidentified plastic were placed into this category.

Faunal Remains

Three animal bones, which appear to be food remains, were the only faunal material recovered during the survey.

Chapter 5

SURVEY RESULTS: PREHISTORIC AND HISTORIC LAND USE PATTERNS IN NORTHERN ORANGE COUNTY

A total of 151 sites were recorded during this survey. Using the survey strategy described previously, 63 sites were recorded along the Little River, 59 sites were recorded along Back Creek, and 8 sites were recorded along Cane Creek. These sites are summarized below based upon artifact density and periods of occupations. Particular emphasis is placed on those sites that appear to be eligible for inclusion in the National Register of Historic Places. Next, a discussion of the spatial patterning of the cultural remains recovered from Little River and Back Creek is presented by using a nonsite approach to monitor temporal and functional differences in prehistoric and historic land use. Finally, a summary of the 21 historic sites recorded in Duke Forest is presented.

PREHISTORIC SITES

A total of 116 sites had prehistoric components. General information concerning individual site type and location is given in Table 5.1. Artifact counts for each site are provided in Appendix B.

Single-Component Sites

A total of 35 sites, including all major periods, were tentatively classified as single-component lithic scatters (Table 5.1). These sites were characterized by very low-density artifact scatters; virtually all contained only a single identifiable point and a few flakes. Rarely, another tool type such as a biface might be included in the site assemblage.

With a single exception, none of these sites would appear to warrant additional attention. The one exception (OR446), however, was a relatively large site primarily defined by flaking debris scattered over an area about 1.5 ha in size. It was recorded during the judgmental survey near Cane Creek. It was located on a broad ridgetop overlooking Watery Fork, a tributary of Cane Creek. The site is tentatively assigned to the Woodland period based on the presence of four small stemmed points (Appendix B). Although no other temporally diagnostic artifacts were recovered, one large biface fragment in the assemblage could be an Archaic point. Another biface and side scraper were also recovered from the site. Despite the relatively high artifact density and the predominance of Woodland points, no pottery sherds were recovered.

The absence of ceramics is unusual given the high artifact density. This absence might suggest that the site contains primarily an Archaic component, typically identified by flaking debris, that happens to include an ephemeral Woodland occupation--perhaps a hunting camp. Further work should include additional intensive surface collection, possibly supplemented by systematic auger tests to better assess its temporal assignment and to

Table 5.1. Site location and components.

Site[1]	Drainage	Stratum	Sample Unit Number	Component
OR307	Little River	upland	4	indeterminate prehistoric
OR308	Little River	riverine	5	indeterminate prehistoric
OR309	Little River	riverine	5	indeterminate prehistoric
OR310	Little River	riverine	5	indeterminate prehistoric
OR311	Little River	riverine	5	Late Prehistoric
OR312	Little River	riverine	5	indeterminate prehistoric
OR313	Little River	riverine	5	indeterminate prehistoric
OR314	Little River	riverine	5	Middle Archaic
OR341	Little River	upland	21	Middle Archaic, Historic
OR342	Little River	upland	21	Early Woodland, Historic
OR343	Little River	upland	21	indeterminate prehistoric
OR344	Little River	upland	21	indeterminate prehistoric
OR345	Little River	upland	21	Middle Archaic, Early-Late Woodland, Historic
OR346	Little River	upland	21	indeterminate prehistoric, Historic
OR347	Little River	upland	21	indeterminate prehistoric
OR348	Little River	upland	21	Historic
OR349	Little River	upland	21	indeterminate prehistoric
OR350	Little River	upland	21	indeterminate prehistoric
OR351	Little River	upland	21	indeterminate prehistoric
OR315	Little River	upland	41	indeterminate prehistoric
OR316	Little River	upland	41	indeterminate prehistoric
OR317	Little River	upland	41	Middle Archaic
OR318	Little River	upland	41	Late Prehistoric
OR319	Little River	upland	41	indeterminate prehistoric
OR320	Little River	upland	41	Early Woodland
OR321	Little River	upland	41	indeterminate prehistoric
OR322	Little River	upland	41	indeterminate prehistoric
OR323	Little River	riverine	19	indeterminate prehistoric
OR324	Little River	riverine	19	indeterminate prehistoric
OR325	Little River	riverine	19	Historic
OR326	Little River	riverine	19	Historic
OR327	Little River	riverine	19	indeterminate prehistoric
OR328	Little River	riverine	19	Late Archaic
OR329	Little River	riverine	19	Middle Archaic, Early Woodland
OR330	Little River	riverine	40	Early-Late Archaic, Early Woodland
OR331	Little River	riverine	40	Middle Archaic
OR332	Little River	riverine	53	Late Archaic
OR333	Little River	riverine	53	Early-Late Woodland
OR352	Little River	riverine	54	indeterminate prehistoric
OR353	Little River	riverine	54	Early Woodland
OR354	Little River	riverine	54	Late Archaic, Late Prehistoric
OR355	Little River	riverine	54	indeterminate prehistoric
OR356	Little River	riverine	54	indeterminate prehistoric
OR357	Little River	riverine	54	indeterminate prehistoric

(continued)

Table 5.1. Site location and components *(continued)*.

Site	Drainage	Stratum	Sample Unit Number	Component
OR334	Little River	upland	63	indeterminate prehistoric
OR335	Little River	upland	63	Historic
OR336	Little River	upland	63	Historic
OR337	Little River	upland	63	indeterminate prehistoric
OR358	Little River	riverine	29	indeterminate prehistoric
OR359	Little River	riverine	29	Historic
OR360	Little River	riverine	29	Middle Archaic
OR361	Little River	riverine	29	indeterminate prehistoric
OR362	Little River	riverine	29	Middle Archaic, Early Woodland
OR363	Little River	riverine	29	indeterminate prehistoric
OR364	Little River	riverine	29	Middle-Late Woodland, Late Prehistoric, Historic
OR365	Little River	riverine	29	indeterminate prehistoric, Historic
OR366	Little River	riverine	30	Middle Archaic
OR367	Little River	riverine	30	indeterminate prehistoric
OR368	Little River	riverine	30	indeterminate prehistoric
OR369	Little River	riverine	30	indeterminate prehistoric
OR338	Little River	riverine	10	indeterminate prehistoric
OR339	Little River	riverine	10	indeterminate prehistoric
OR405	Back Creek	upland	7	indeterminate prehistoric, Historic
OR406	Back Creek	upland	7	Early Woodland, Historic
OR407	Back Creek	upland	7	Middle-Late Archaic, Historic
OR340	Little River	riverine	10	Late Archaic
OR408	Back Creek	upland	25	Early Archaic, Historic
OR409	Back Creek	upland	25	indeterminate prehistoric, Historic
OR410	Back Creek	upland	25	indeterminate prehistoric, Historic
OR411	Back Creek	upland	25	Historic
OR412	Back Creek	upland	25	Middle Archaic
OR413	Back Creek	upland	25	indeterminate prehistoric
OR414	Back Creek	upland	25	Early Archaic, Historic
OR415	Back Creek	upland	25	indeterminate prehistoric, Historic
OR416	Back Creek	upland	25	indeterminate prehistoric, Historic
OR417	Back Creek	upland	25	Historic
OR418	Back Creek	upland	25	Middle Archaic
OR419	Back Creek	upland	25	Middle Archaic
OR399	Back Creek	riverine	7	Early-Late Woodland, Late Prehistoric
OR400	Back Creek	riverine	7	indeterminate prehistoric,
OR401	Back Creek	riverine	7	indeterminate prehistoric

(continued)

Table 5.1. Site location and components *(continued)*.

Site	Drainage	Stratum	Sample Unit Number	Component
OR403	Back Creek	riverine	15	indeterminate prehistoric
OR404	Back Creek	riverine	15	Middle Archaic
OR370	Back Creek	upland	14	Middle Archaic, Late Prehistoric
OR371	Back Creek	upland	14	indeterminate prehistoric
OR372	Back Creek	upland	14	indeterminate prehistoric, Historic
OR373	Back Creek	upland	14	indeterminate prehistoric
OR374	Back Creek	upland	14	Early Archaic
OR375	Back Creek	upland	14	Middle Archaic
OR376	Back Creek	upland	14	Late Archaic
OR377	Back Creek	upland	14	indeterminate prehistoric
OR378	Back Creek	upland	14	indeterminate prehistoric
OR379	Back Creek	upland	14	indeterminate prehistoric
OR380	Back Creek	upland	14	Middle-Late Archaic
OR381	Back Creek	upland	14	Middle-Late Archaic
OR382	Back Creek	riverine	14	indeterminate prehistoric
OR383	Back Creek	riverine	14	indeterminate prehistoric
OR384	Back Creek	riverine	14	Late Prehistoric
OR385	Back Creek	riverine	14	indeterminate prehistoric
OR386	Back Creek	upland	13	Late Archaic
OR387	Back Creek	upland	13	Late Archaic
OR388	Back Creek	upland	13	Middle-Late Woodland
OR389	Back Creek	upland	13	indeterminate prehistoric
OR390	Back Creek	riverine	10	Historic
OR391	Back Creek	riverine	10	Late Prehistoric
OR392	Back Creek	riverine	10	Late Prehistoric
OR393	Back Creek	riverine	10	indeterminate prehistoric
OR394	Back Creek	riverine	10	Early Archaic?, Middle-Late Woodland, Late Prehistoric, Historic
OR395	Back Creek	upland	12	indeterminate prehistoric, Historic
OR396	Back Creek	upland	12	Middle Archaic
OR397	Back Creek	upland	12	indeterminate prehistoric
OR398	Back Creek	upland	12	Middle Archaic
OR420	Back Creek	upland	26	indeterminate prehistoric
OR421	Back Creek	upland	26	indeterminate prehistoric
OR422	Back Creek	upland	26	indeterminate prehistoric
OR423	Back Creek	upland	25	Historic
OR424	Back Creek	upland	25	Late Prehistoric
OR425	Back Creek	upland	25	indeterminate prehistoric
OR426	Back Creek	upland	25	indeterminate prehistoric
OR427	Back Creek	upland	25	Early Archaic
OR441	Back Creek	upland	25	indeterminate prehistoric
OR442	Cane Creek	-	-	indeterminate prehistoric
OR443	Cane Creek	-	-	indeterminate prehistoric
OR444	Cane Creek	-	-	indeterminate prehistoric
OR445	Cane Creek	-	-	indeterminate prehistoric
OR446	Cane Creek	-	-	Early Woodland
OR447	Cane Creek	-	-	Early Archaic
OR448	Cane Creek	-	-	Indeterminate prehistoric
OR428	Cane Creek	-	-	indeterminate prehistoric

[1] All Office of State Archaeology site numbers begin with the state number 31 which is omitted here for convenience.

gather data regarding the possible presence of Woodland features (e.g., Ward and Davis 1993).

This site could yield significant information on local prehistory and thus be eligible for nomination to the National Register of Historic Places. In spite of the methodological problems associated with muticomponent plowzone sites, they can be used to address research questions dealing with prehistoric settlement and raw material use (cf. Canouts and Goodyear 1985). The issue of site reoccupation as it relates to site integrity is a pattern common to many Piedmont "lithic scatters"; this issue is addressed in the following discussion of multicomponent sites.

Multicomponent sites

A total of 15 sites were classified as multicomponent occupations because more than one identifiable point type were recovered. Again, most of these sites were low density lithic scatters but produced point types from at least two different periods or phases.

At least three of these sites (OR345, OR330, OR362), are noteworthy and warrant additional study. Unlike most cultural remains encountered during the survey, these lithic scatters were concentrated over small well defined areas about .5 ha in size. Site OR345 was located on a small hilltop overlooking Buffalo Creek, a tributary of the North Fork of the Little River. The second site, OR330, was found on a small knoll situated on a broad ridgetop, overlooking the North Fork of the Little River. Although both sites were primarily defined by flaking debris, several Middle-to-Late Archaic point types and at least one Early-to-Middle Woodland point type were also present in each assemblage, along with bifaces and cores. In addition, scrapers were recovered at OR345, while a drill and a single sand-tempered sherd were recovered at OR330.

A third site (OR362) is also associated with the North Fork of the Little River, but does not directly overlook any water source and is, in fact, over .5 km away from the nearest flowing water (Figure 5.1). Single examples of Morrow Mountain, Gypsy, and Swannanoa points also recovered in the assemblage. As with the previous two sites, other artifact types were recovered in addition to points and flakes. These tool types included bifaces, an end scraper, and a graver.

Another smaller and somewhat less dense site (OR381), located in an upland zone along Back Creek, also warrants further investigation. Although the site only exhibited a somewhat diffuse artifact scatter over .4 ha, it produced a fairly high number of points, including three Small Savannah River, and single specimens of Morrow Mountain, Guilford, and an unidentified type with an expanded stem (see Chapter 5). Other recovered tools included three scrapers, two point fragments, and a biface. The relatively high number of tools recovered from this site was unusual and therefore it site should receive additional evaluation to determine its eligibility for inclusion in the National Register of Historic Places.

These sites represent Middle to Late Archaic occupations and would appear to contain data likely to yield significant information regarding Archaic settlement in the Piedmont, and thus be eligible for nomination to the National Register of Historic Places. Virtually no such interior Piedmont sites have been professionally excavated in North Carolina. In fact, these sites--often labeled as lithic scatters--have not been highly regarded by

Figure 5.1. Site OR362 (view north).

Figure 5.2. Site OR354 (view northeast).

archaeologists in the Southeast (see discussion by Goodyear et al. 1979:155). Since the cultural deposits associated with these sites are largely limited to surface or plowzone deposits--and often multicomponent and unstratified in nature--they have been viewed as lacking "context" which is viewed as critical to any understanding of such sites. Such a view may not be warranted in every case, however. Although chronological control may be wanting among these sites, they are not all analytically intractable, as interpretable intrasite spatial distributions have been discovered from controlled surface collected sites and excavated plowzone deposits (see discussion by Canouts and Goodyear 1985). The implication of this work is clear for archaeologists in the North Carolina Piedmont: searching for similar sites could prove productive. Minimally, therefore, further work at these three sites could include controlled surface collections to further assess such issues as assemblage composition and spatial patterning.

Finally, one additional site is distinguished by a relatively dense concentration of both stone and ceramic artifacts. Site OR354 represents a large (over 2 ha) Late Prehistoric occupation located on the South Fork of the Little River, containing Haw River and Hillsboro phase ceramics. The site is situated on a low rise in the river floodplain. In addition to the ceramics, several small triangular points, bifaces, cores, a hammerstone, a chipped-stone hoe fragment, and one possible human bone fragment were recovered from the site. Present evidence suggests that this site represents a Haw River-Hillsboro phase settlement like those known along the Eno and Haw Rivers (Ward and Davis 1993). Its size, in fact, suggests a more nucleated settlement, perhaps similar to that of the Wall site along the Eno. In any event, this site probably contains evidence of individual households with associated storage pits, hearths, and burials. Because this site represents the only known Late Prehistoric habitation in northern Orange County, and may have intact deposits, it is probably eligible for nomination to the National Register of Historic Places.

Sites With Unidentified Components

The remaining 66 prehistoric sites contained no diagnostic points. These sites were all characterized by very low-density artifact scatters predominantly composed of flakes and are labeled as "Indeterminate Prehistoric" in Table 5.1. Four of these sites also produced three small unidentified sand-tempered sherds and two cord-marked sherds. (Thus, these four sites could be broadly associated with some Woodland or Late Prehistoric component.) Occasionally, these flake scatters would include isolated examples of another tool class such as a biface or scraper. None of these sites would appear to warrant additional investigation.

Artifact Densities

Although the majority of the prehistoric sites recorded during this survey might not be eligible for National Register status, it should be stressed that, taken collectively, the cultural material from the survey did yield important information concerning prehistoric land use patterns. By examining the distribution of artifacts across the survey area, rather than sites, it was possible to more fully understand the archaeological record at a regional level. In fact, the use of the notion "site," at this stage of analysis was constraining and unnecessary. Rather, variation in artifact density was investigated by using agricultural fields as the basic unit of analysis. The spatial patterning of cultural remains in the survey area was addressed by examining artifact densities in the sampling strata (riverine and upland zones) of Little River and Back Creek.

Two factors control the number of artifacts that can be surface collected: ground surface visibility and the area examined. That is, the greater surface visibility and the more area one has available to walk, the greater number of artifacts that can be recovered. Since both of these factors were controlled in the survey, they were used to make artifact density estimates comparable among fields. As noted in Chapter 4, surface visibility was recorded at the time of survey based upon crop height and field wash. The area examined in a field was calculated by dividing collection transect width (3 m) by the distance between the centers of adjacent transects (5 m). Thus, approximately 60% of each field was examined.

Artifact densities were computed with a variable referred to as corrected area (C-Area) (see L. Steponaitis 1986:196-198). This variable, which accounts for the proportion of the surface visible and the proportion of the field surveyed, is an estimate of the actual area surface collected within the field. It was computed as follows:

$$C\text{-}Area = A\ V\ P$$

where A equals the total area of the field in hectares, V equals ground surface visibility expressed as a percentage, and P equals the proportion of the field examined by transects. The value for artifact density obtained by dividing the number of artifacts recovered from a field by its corrected area is an estimate of the expected artifact density had the entire field been surface collected under conditions of 100% visibility. By controlling for difference in field size and visibility, density estimates were made comparable among fields.[1] The extent of survey coverage by drainage is summarized in Table 5.2.

Spatial patterning

As a first step in assessing spatial variation in the distribution of archaeological remains within the survey area, artifact densities were calculated by stratum for both the Little River and Back Creek. Given the assumption of a more or less constant artifact-disposal rate, artifact density was used to monitor the relative intensity of prehistoric use in each area. A rough estimate of the average number of artifacts per hectare was calculated for each zone by dividing the total number of artifacts from all surveyed fields within each zone by the total corrected area for those fields (Table 5.3). By considering all artifacts and not just diagnostic items (e.g., points), this first step provides a general, atemporal view of drainage and zonal variation in the intensity of prehistoric use.

Several patterns are evident in a comparison of artifact densities between the two drainages (Figure 5.3). First, Little River artifact density is slightly greater than Back Creek. Second, when each drainage is divided into environmental zones, riverine stratum along Little River exhibits the highest artifact densities. Third, riverine strata for both Back Creek and Little River have much greater densities than their associated upland strata. Fourth, upland strata artifact densities for both drainages are virtually identical.

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[1]As noted in Chapter 4, attempts were made to completely surface collect two sites (Or299 and Or233) and adjustments were made for this additional area collected in the appropriate fields when calculating corrected area.

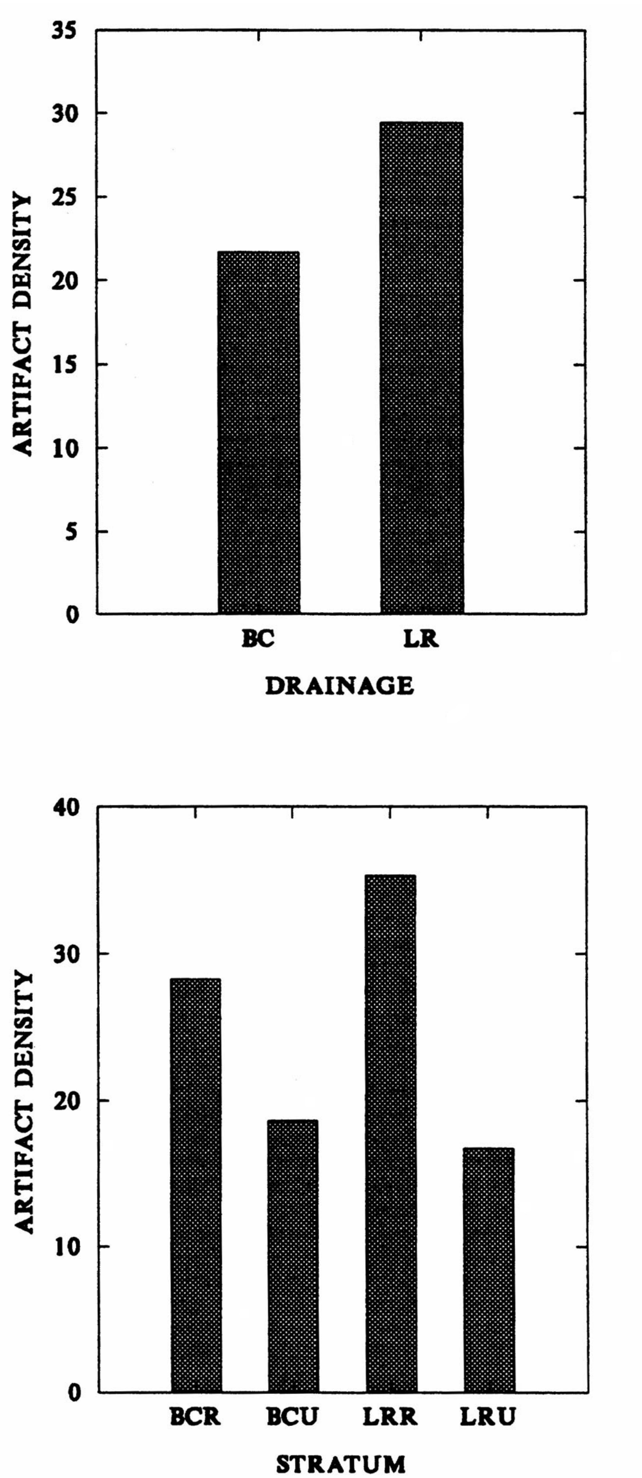


Figure 5.3. Prehistoric artifact density by drainage (top) and stratum (bottom) (based on Table 5.3). Key: BC, Back Creek; LR, Little River; BCR, Back Creek Riverine Stratum; BCU, Back Creek Upland Stratum; LRR, Little River Riverine Stratum; LRU, Little River Upland Stratum.

Table 5.2. Summary of Survey Coverage by Drainage.

Drainage: Stratum	Number of surveyed fields	Total Area (ha)	Corrected Area (ha)
Little River			
Riverine	32	81.3	35.1
Upland	12	33.4	16.1
Back Creek			
Riverine	13	20.1	10.9
Upland	36	59.8	23.3

Table 5.3. Prehistoric Artifact Densities by Stratum.

Drainage: Stratum	Artifact counts	Corrected Area (ha)	Corrected Density (artifacts/ha)
Little River:			
Riverine	1,238	35.1	35.3
Upland	268	16.1	16.7
Back Creek:			
Riverine	308	10.9	28.3
Upland	434	23.3	18.6

It seems reasonable to assume that the patterns noted here are related, at least to some extent, to drainage size and/or proximity to water. Moreover, the greater artifact densities associated with the Little River reflects its slightly greater size than Back Creek, particularly along portions of the South Fork. Similarly, the greater artifact densities present in the riverine versus upland zones within each drainage probably reflect the former zone's proximity to a greater and more stable water source. In any event, both drainages show clear evidence of prehistoric utilization. Moreover, it is also apparent that both environmental zones within each drainage must be evaluated when interpreting past land use.

Component Density

Further insight into the nature of prehistoric settlement in the study area was obtained by studying how component density changed through time. Here, components were defined on the basis of identifiable point types. Following the discussion in Chapter 3, all identifiable points were associated with an archaeological period from Early Archaic through the Late Prehistoric period (Table 5.4). In a manner similar to the calculations made for artifact density between the two drainages, estimates of point densities were generated by dividing the number of points within each period for each zone by the total *C-Area* for that zone. To meaningfully compare component density among time periods of different lengths, the raw density estimates were divided by period length and expressed as standardized densities per 1000 years.

Table 5.4. Standardized Point Densities by Drainage and Stratum[a]

Period Drainage: Stratum	Number of Points	Raw Densities (points/*C-Area*)	Standardized Densities (raw density/1000 yr)
Early Archaic			
Little River:			
Riverine	1	.03	.02
Upland	-	-	-
Back Creek			
Riverine	-	-	-
Upland	4	.17	.11
Middle Archaic			
Little River:			
Riverine	13	.37	.12
Upland	4	.25	.08
Back Creek:			
Riverine	1	.09	.03
Upland	10	.43	.14
Late Archaic			
Little River:			
Riverine	5	.14	.07
Upland	-	-	-
Back Creek:			
Riverine	-	-	-
Upland	8	.34	.17

(continued)

Table 5.4 *(continued)*. Standardized Point Densities by Drainage and Stratum.

Period Drainage: Stratum	Number of Points	Raw Densities (points/*C-Area*)	Standardized Densities (raw density/1000 yr)
Early Woodland			
Little River:			
Riverine	7	.20	.19
Upland	3	.19	.19
Back Creek:			
Riverine	3	.28	.28
Upland	1	.04	.04
Middle-Late Woodland			
Little River:			
Riverine	2	.06	.06
Upland	1	.06	.06
Back Creek:			
Riverine	3	.28	.28
Upland	1	.04	.04
Late Prehistoric			
Little River:			
Riverine	8	.23	.06
Upland	1	.06	.09
Back Creek:			
Riverine	11	1.0	1.4
Upland	2	.09	.13

[a] Point frequencies are taken from Appendix A. Densities are calculated with the *C-Area* values in Table 6.2. Standardized densities are computed per 1000 years where the Early Archaic, Middle Archaic, and Late Archaic equal 1500, 3000, and 2000 years respectively; the Early Woodland, Middle-Late Woodland, and Late Prehistoric equal 1000, 1000, and 700 years respectively.

Again, several interesting patterns emerge from this analysis (Figure 5.4). Along the Little River, component densities in the riverine and upland zones are virtually identical, with the exception of the Late Prehistoric and perhaps the Late Archaic periods. In general, though, these data indicate a slight increase in component density through time for both zones, with minor peaks during the Middle Archaic and Early Woodland periods. A more dramatic increase in component density occurs during the Late Prehistoric period in the riverine zone.

Turning to Back Creek, an entirely different pattern can be observed. Clear differences exist in component densities between the riverine and upland zones. The most striking difference, of course, is seen between the much greater component densities in the riverine zone during the Late Prehistoric period. Perhaps the most striking pattern, however, is the temporal shift that takes place following the Late Archaic with respect to component densities between zones. Throughout the Archaic period, greater component densities are observed in the upland zone than in the riverine zone. In fact, Archaic points were virtually absent in the riverine zone. This pattern is reversed, though, beginning with the Early Woodland period. A step-like increase in component density takes place in the riverine zone during the Early Woodland while a similar decrease takes place in the upland zone. This increase in the riverine zone levels off with the Middle Woodland followed by the dramatic increase during the Late Prehistoric. Similarly, the decrease in component density in the upland zone during the Early Woodland stabilizes during the Middle-Late Woodland, followed by a slight increase during the Late Prehistoric period.

Interassemblage Variation

In light of these results, the question then becomes, does this patterning simply reflect the frequency and/or intensity with which the riverine and upland zones were used, or does this pattern represent some functional differences in zonal use? This question was addressed by constructing functional profiles of artifact frequencies for each zone. Thus, potential functional variation was initially examined in a nontemporal fashion.

Following the classification in Chapter 5, five "functional" classes were created: (1) points, (2) bifaces, (3) other stone tools, (4) debitage, and (5) ceramics (Table 5.5). Points represent items that were used in hunting and butchering. Bifaces include items that represent either cores, tools, or unfinished points. The category other stone tools include a variety of artifacts that comprise a variety of site maintenance or extractive activities including all unifacial tools as well as large chipped-stone and cobble tools. Finally, all byproducts of stone tool manufacture including flakes and cores were classified under debitage, while all pottery sherds were placed under ceramics.

These functional categories, of course, are somewhat broad and not necessarily mutually exclusive. The categories bifaces and debitage, for example, both include some items that served as cores. Likewise, some bifaces may have served as cutting tools as well as cores. These possibilities, of course, underline the fact that stone tools reflect more than the tasks they were designed for. That is, stone tools were designed to fulfill certain roles in the settlement system as well as certain functional tasks. Thus, tools were made to be used not only for a particular function (or range of functions) but they were designed with respect to long- versus short-term usage, to be used at specific times and places in the settlement system (Binford 1977, 1978, 1979). In short, tool assemblages reflect the organized use of prehistoric landscapes and the relative frequencies of artifact categories generated here are provided as one method for examining this variation in landscape use.

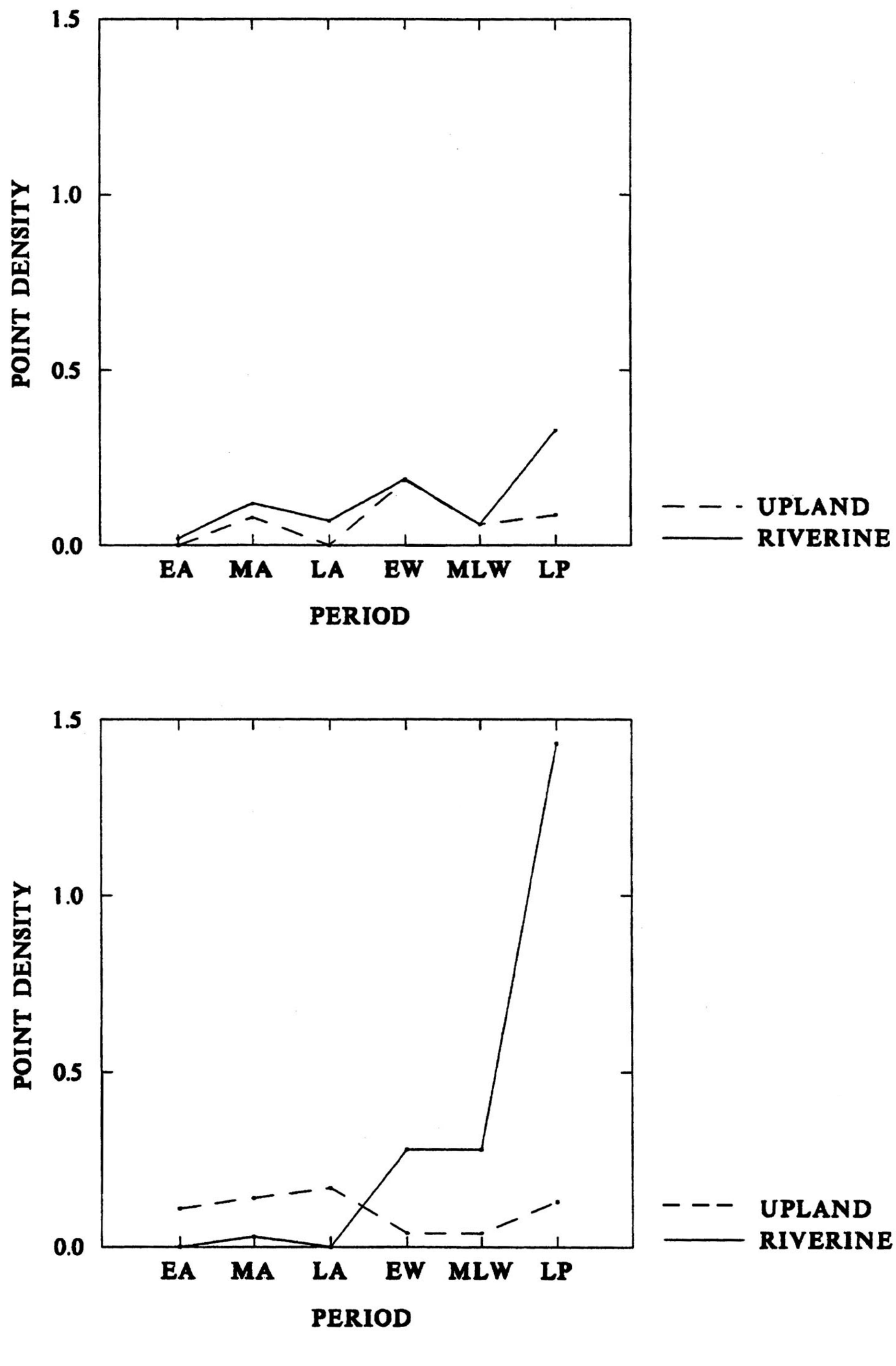


Figure 5.4. Standardized point densities by stratum for Little River (top) and Back Creek (bottom) based on Table 5.4. Key; EA, Early Archaic; MA, Middle Archaic; LA, Late Archaic; EW, Early Woodland; MLW, Middle-Late Woodland; LP, late Prehistoric.

Table 5.5. Prehistoric Artifact Assemblages By Stratum.

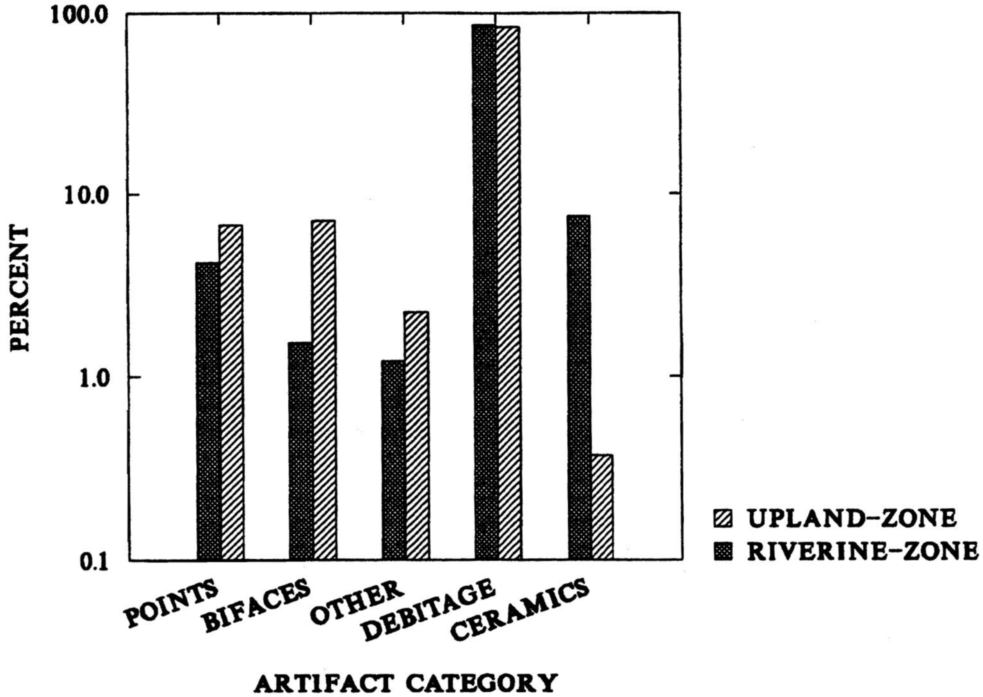
Drainage: Stratum	Points n	Points %	Bifaces n	Bifaces %	Other Stone Tools n	Other Stone Tools %	Debitage n	Debitage %	Ceramics n	Ceramics %	Totals n	Totals %
Little River:												
Riverine	52	4.2	19	1.5	15	1.2	1059	85.5	93	7.5	1238	99.9
Upland	18	6.7	19	7.1	6	2.2	224	83.9	-	-	267	99.9
Back Creek:												
Riverine	30	9.7	13	4.2	5	1.6	260	84.4	-	-	308	99.9
Upland	57	13.1	9	2.1	12	2.7	353	81.3	3	.7	434	100.0

Turning now to the results, a comparison of the assemblage frequencies between the two environmental zones of the Little River reveal fairly similar patterns (Figure 5.5). Both zones are dominated by virtually identical debitage frequencies (circa 83%). The frequencies of the remaining artifact categories are all low (circa 7% or less), with the upland zone exhibiting slightly higher frequencies of points, bifaces, and other tools than the riverine zone. Perhaps the most substantial difference between the two zones, however, is the virtual absence of ceramics in the upland zone. A comparatively greater sherd frequency is present in the riverine zone (7.5%).

Excluding the category ceramics, it is difficult to see any substantial differences in assemblage patterns that might suggest differences in settlement use between the two zones. Of course, viewing assemblages in this nontemporal fashion might mask potential diachronic differences, but given their similar patterns it could be tentatively proposed that little variation existed in settlement use of the two zones during the Archaic and Woodland periods. Whether land use was primarily for residential or special resource procurement episodes (or both) cannot be determined based upon present evidence. If the category "other stone tools" is any indication of the maintenance activities performed in the area, then its low frequencies would suggest that residential use of the area must have been relatively minor. Presumably, this use would have been by small groups for relatively short periods of time. For whatever purposes, the Little River was probably used most intensively during the Middle Archaic and Early Woodland periods.

A somewhat different interpretation, however, is suggested for Late Prehistoric settlement. Perhaps the most substantial difference between the two zones is the virtual absence of ceramics in the upland zone. The ceramics present in the riverine zone, though, were virtually all recovered from one site (OR354). Site OR354 is a relatively large, Late Prehistoric occupation on the South Fork of the Little River containing Haw River and Hillsboro phase ceramics. Furthermore, this same site also accounts for the high peak in component density during the Late Prehistoric period noted in Figure 5.4. Of the 8 small triangular points present in the riverine zone assemblage, 6 were recovered from OR354. Taken together then, these data indicate that the Late Prehistoric use of the Little River was primarily confined to the riverine zone with at least one relatively large and intense occupation.

Most likely, this occupation represents a residential settlement of some duration similar to those described along the Haw, Eno, and Flat Rivers for Haw River and Hills-



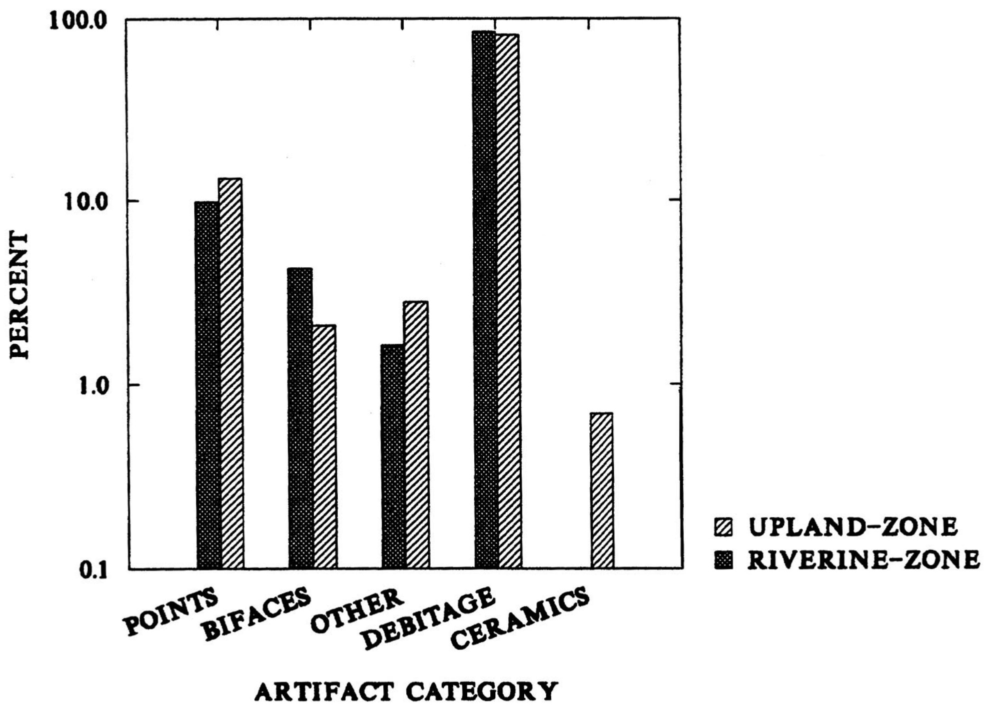


Figure 5.5. Prehistoric artifact assemblage frequencies for Little River (top) and Back Creek (bottom) (based on Table 5.5).

boro phases noted in Chapter 3 (see Ward and Davis 1993). This interpretation is further supported by the recovery of two additional items from this site placed in the "other stone tool" category and usually associated with residential camps: a hammerstone and a chipped-stone hoe fragment. Given the absence of ceramics and the low point density in the upland zone, then, this area was probably used for short-term hunting and gathering forays rather than long-term settlement.

A somewhat similar assemblage profile is seen in the two environmental zones from Back Creek. Again, assemblages from the riverine and upland zones are dominated by debitage (84% and 81%, respectively). Similarly, the categories "points", "bifaces", and "other stone tools", each comprise about 10% or less of the assemblage. Sherds are present in the uplands but absent in the riverine zone; however, their presence is very minor (less than 1%). Again, these results suggest that little substantial difference existed in the settlement use of upland- versus riverine zones along Back Creek throughout prehistory. Residential sites belonging to the Woodland and Late Prehistoric periods, in particular, appear to be missing along Back Creek as indicated by the absence of ceramics from the riverine zone and their very minor occurrence in the uplands. This absence combined with the marked density of Woodland and, in particular, Late Prehistoric points (Figure 5.4) suggests that Back Creek was used for short-term hunting episodes.

Another interesting pattern that emerges from this assemblage analysis is the enduring and dominating presence of bifacial stone tools (including points) and the debitage associated with their manufacture and maintenance (Table 5.5). Few other artifact types were present to any degree in the assemblages from both drainages. Despite whatever cultural changes might have taken place in the study area through time, a bifacial technology in varying forms solved at least some adaptive problems for some 10,000 years.

Related to the persistent use of bifacial tools is that practically all were made from metavolcanic stone (Table 5.6). Similar patterns are reflected in raw material use among the various flake categories (Table 5.7). Several varieties of metavolcanic stone, of course, outcrop in the Piedmont and the dominance of this raw material in the assemblage undoubtedly reflects its local occurrence in the region. Metavolcanic stone was classified into four types in this analysis, including three types of rhyolite and a residual category labeled other metavolcanic stone. This latter category was the most prevalent in the bifacial tools (51.9%) and debitage (61.6%) included what appeared to be rhyolitic tuffs and many weathered specimens that otherwise could not be more positively identified. The source or sources of these materials are unknown but probably are relatively close to the survey area.

Of particular interest, however, is the substantial presence of a nonlocal rhyolite in the assemblage. At least 42% of the bifacial assemblage and 29% of the debitage was made from Uwharrie rhyolite--a rhyolitic flow that was probably procured from the Uwharrie Mountains near the Hardaway site along the Yadkin River (Daniel and Bulter 1991, 1994). Three types of Uwharrie rhyolite have been identified in the assemblage: two porphyritic varieties and an aphyric variety. All three rhyolite types are characterized by a dark gray, fine-grained groundmass with variable flow-banding; they are distinguished from each other by the presence of plagioclase and/or quartz phenocrysts in the porphyritic rhyolite which are absent in the aphyric variety. The aphyric rhyolite is probably from Morrow Mountain, which is situated at the southern tip of the Uwharries and represents the largest and most extensively used quarry in the region (Daniel and Butler 1994).

The presence of rhyolite from the Uwharrie Mountains is significant as the nature of its procurement has implications concerning the settlement use of the area. That is, either

Table 5.6. Frequency Distribution of Points and Bifaces by Raw Material.

			Porphyritic Rhyolite			
Type	Other Metavolcanics	Aphyric Rhyolite	Plagioclase	Plagioclase-Quartz	Quartz	Chert
Hardaway Side-Notched	-	-	1	-	-	-
Palmer Corner-Notched	-	1	-	-	-	-
Kirk Corner-Notched	1	1	1	-	-	-
Kirk Stemmed	-	-	1	-	-	-
Stanly Stemmed	1	-	-	-	-	-
Morrow Mountain St.	2	1	3	2	-	-
Guilford Lanceolate	4	-	6	3	-	-
Savannah River St.	-	-	2	-	-	-
Small Savannah River Stemmed	7	-	4	-	-	-
Gypsy Stemmed	4	-	2	-	2	-
Randolph Stemmed	3	1	1	-	-	-
Swannanoa	-	-	-	-	-	1
Badin Triangular	2	-	1	1	-	-
Yadkin Triangular	1	-	-	-	-	-
Eared Yadkin	1	-	-	-	-	-
Small Triangular	12	7	3	-	-	-
Unidentified Triangular	-	-	1	-	-	-
Unidentified Side-Notched	2	-	1	-	-	-
Unidentified Corner-Notched	1	-	-	-	-	-
Unidentified Small Stemmed	-	-	2	-	-	-
Unidentified points	33	6	14	4	5 [a]	-
Bifaces	37	6	10	3	6	-
Totals	111 (51.9%)	23 (16.7%)	53 (24.8%)	13 (6.1%)	13 (6.1%)	1 (.5%)

[a] Includes one crystal quartz.

Table 5.7. Frequency Distribution of Flake and Shatter Classes by Raw Material.

Type	Other Metavolcanics	Aphyric Rhyolite	Porphyritic Rhyolite: Plagioclase	Porphyritic Rhyolite: Plagioclase-Quartz	Quartz	Chert
Biface Thinning Flakes	680	197	155	48	56 [a]	3 [b]
Thinning Flakes	604	73	114	18	119 [c]	1 [d]
Shatter	19	4	1	1	21 [c]	-
Totals	1303 (61.6%)	274 (13.0%)	270 (12.8%)	67 (3.2%)	196 (9.3%)	4 (.2%)

[a] Includes 2 crystal quartz
[b] Includes 2 knox chert and one chalcedony
[c] Includes 3 crystal quartz
[d] One brown chert

Uwharrie rhyolite was obtained directly at its source, and then carried and eventually discarded in northern Orange County or, alternately, this stone was obtained indirectly via exchange mechanisms. Whatever these mechanisms were, the persistent presence of Uwharrie rhyolite among the various point types recovered here, suggests that cultural systems throughout the Holocene involved the Uwharrie Mountains, at least to some degree, in their geographic range of adaptations (cf. Daniel 1994).

Discussion

The above analyses indicate that cultural remains reflecting most of the region's prehistory are widely scattered over both drainages. Artifact densities suggest that land use intensity increased with proximity to both rivers; comparatively greater densities were present along the Little River than Back Creek. This difference, however, appears to be the result of a single, relatively large, Late Prehistoric site that may be unique to the area. Moreover, while point densities along the Little River suggest a slight increase in the utilization through time of both the riverine and upland zones, this trend does not appear to be the case along Back Creek. Instead, the uplands seem to have been utilized more heavily than the riverine zone throughout the Archaic, but this trend reverses during the Woodland and Late Prehistoric periods.

A comparison of the artifact assemblages between the riverine and upland zones suggests that more functional similarities than differences existed along both drainages through time, with the exception of the Late Prehistoric period. Accordingly, these assemblages reflect a rather short-term use of the area--whether the purpose was primarily residential or not is unclear--through most of the Holocene. A dichotomy in land use, however, is indicated during late Prehistory along the Little River with the riverine zone being used for settlement while the uplands were used for hunting. No such dichotomy, however, is indicated along Back Creek. Here, the data suggest that both environmental zones probably were used for specialized tasks like hunting.

No doubt the clarity of the above patterns could be improved by examining separate components across the study area. But given the nature of surface data, it is not possible to separate most stone tool and debris classes by their respective technological systems except, of course, in the case of points. Nevertheless, a search for patterning in surface data at a regional scale can still be productive, as this analysis has attempted to show. This search for patterning in surface data also raises another issue of relevance to this survey, if not piedmont archaeology in general: the phenomenon of "site" reoccupation.

The presence of site or landform reoccupation has been known for several decades in the Piedmont of North Carolina (cf. Coe 1964:6), and is certainly prevalent in the South Carolina Piedmont as well (see discussion by Goodyear et al. 1979:153-178). It was not unexpected, therefore, to encounter this phenomenon during the course of this survey. It should also be noted that multicomponent sites are defined here in terms of the reuse of a limited area rather than a strict superposition of occupations (cf. Simpkins and Petherick 1985:97). Again, using agricultural fields as a unit of analysis, site reoccupation can be illustrated here by monitoring the presence of different point types in the same field. Of the 93 fields surveyed along both drainages, the percentage (circa 23%, n=21) of "single component" fields (i.e., fields containing only one point type) is not substantially higher than "multicomponent fields" (circa 16%, n=15) (i.e., fields containing more than one point type).

While a detailed study of site reoccupation is beyond the scope of this study, this trend is a significant one and is worthy of further study. That is, rather than viewing these sites as problematic due to their lack of stratification, the trend of landscape reuse that took place throughout the Holocene is a pattern itself in need of explanation (cf. Goodyear 1979:169-178). And so, while the observance of this pattern is not unique, it is still somewhat surprising given the apparent uniformity of the area's landscape and its potential for widely dispersed occupations. One implication of site reoccupation, for which partial evidence has been presented here, is that similar land use strategies existed throughout much of the Holocene. Additional work needs to be done to adequately address this question, and further survey data along the lines gathered here would be an important part of this process.

HISTORIC SITES

A total of 27 sites had historic components along Little River and Back Creek (Table 5.1). Virtually all of these sites were characterized by light artifact scatters, primarily composed of ceramics and glass. Structural evidence (e.g., stone foundations or chimney falls) was associated with these surface scatters in only one case. This latter site (OR364), consisted of a relatively small rock-pile that represented the remains of a chimney. But, we could not be certain of this identification until it was confirmed by the landowner who remembered seeing more substantial chimney remains there as a boy.

Virtually all of the ceramic evidence from these sites indicate they date from the mid 19th to early 20th centuries. A few examples of some very small sherds dating to the 18th century were also recovered from five sites (OR335, OR406, OR407, OR408, OR410). In no case, however, was there any evidence of a substantial 18th century occupation found during the fieldwork. Furthermore, assuming that these artifact scatters are all that remain of these sites, none would appear to be eligible for listing in the National Register of Historic Places.

Finally, an example of one other historic site type--a small cemetery (OR325)--was also recorded. It consisted of approximately two dozen graves. Some graves dated to the late 19th or early 20th centuries, but most were represented by unmarked fieldstones.

Artifact Densities

Spatial patterning in historic remains between Little River and Back Creek was examined in a similar manner to that described for the prehistoric artifacts (Table 5.8). A comparison of historic artifact densities between the two drainages indicates that Back Creek has a much greater density than Little River (Figure 5.6). In fact, when each drainage is divided into environmental zones, it can be seen that greater densities are actually limited to the upland zone in Back Creek; the riverine zone along Back Creek and both environmental zones along the Little River all have nearly identical values (Figure 5.6). (The upland zone value for Back Creek should be higher since this stratum contained the recently razed tenant home [OR416] where, as noted in Chapter 4, only a small sample of artifacts was collected.) The reason that the upland zone along Back Creek should exhibit such a substantially greater intensity of historic activity relative to the other zones is not readily apparent. Whether this pattern is culturally meaningful or perhaps the result of sampling error is difficult to determine. Whatever the reason, this would appear to be a problem worthy of future investigation.

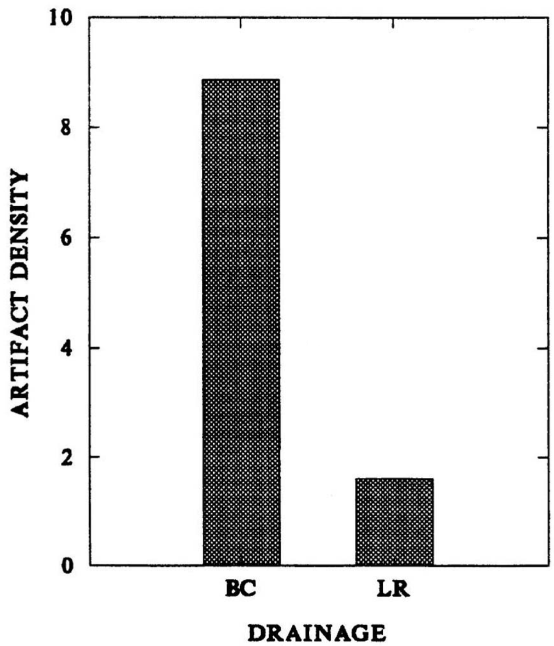
Table 5.8. Historic Artifact Densities By Stratum.

Drainage: Stratum	Artifact Count	Corrected Area (ha)	Corrected Density (artifacts/ha)
Little River:			
Riverine	56	35.1	1.6
Upland	26	16.1	1.6
Back Creek:			
Riverine	19	10.9	1.7
Upland	284	23.3	12.2

Table 5.9. Historic Artifact Groups by Stratum.[1]

	Kitchen		Architectural		Personal		Activities		Furniture and Furnishings		Totals	
Drainage: Stratum	n	%	n	%	n	%	n	%	n	%	n	%
Little River:												
Riverine	53	94.6	3	5.4	-	-	-	-	-	-	56	100.0
Upland	23	88.5	3	11.5	-	-	-	-	-	-	26	100.0
Back Creek:												
Riverine	16	84.2	1	5.3	1	5.3	1	5.3	-	-	19	100.1
Upland	240	85.4	25	8.9	2	.7	11	3.9	3	1.1	281	100.0

[1] Based on South 1977. Note also Bone Group (n=3) not included (see South 1977:97).



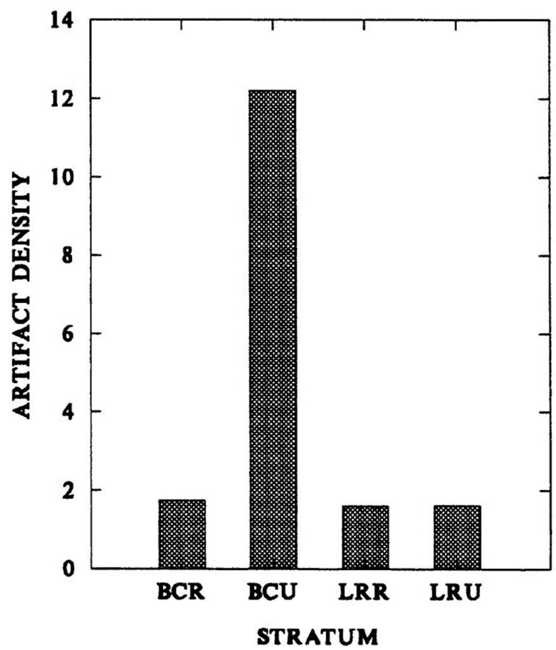


Figure 5.6. Historic artifact densities by drainage (top) and stratum (bottom) (based on Table 6.8). Key: BC, Back Creek; LR, Little River; BCR, Back Creek Riverine Stratum; BCU, Back Creek Upland Stratum; LRR, Little River Riverine Stratum; LRU, Little River Upland Stratum.

Interassemblage Variation

Potential assemblage variation was also examined between the drainages. Following the classification in Chapter 5, the assemblages from each stratum were compared following South's artifact groupings (Table 5.9). Using this surface data, it is difficult to interpret exactly what type of activities these patterns represent (Figure 5.7). Presumably, they reflect the activities associated with late 19th and early 20th century homesteads, although it is difficult to account for the variation seen in assemblage frequencies among the four zones. Some variation, however, is probably due to sample-size differences. For example, assemblage size from the riverine zone along Back Creek (n=19) and the upland zone along the Little River (n=26), are much smaller than for the upland zone along Back Creek (n=284). Assuming this is the case, then it is interesting to note the striking similarities between the assemblage pattern from the upland zone along Back Creek and the surface survey data from 205 19th and 20th century sites collected from along the Savannah River (Taylor and Smith 1978:351-353). Using South's artifact groupings, Taylor and Smith derived what they referred to as the "Piedmont Survey Pattern." This pattern consisted of the following artifact groups: Kitchen (85.4%), Architectural (12.0%), Personal (1.47%), Activities (.2%), Clothing (.91%), and Arms (.02%) (Taylor and Smith 1978:Table 73). Moreover, they found substantial differences between the Piedmont Survey Pattern and the Carolina and Frontier Artifact Patterns published by South for 18th century sites.

While such differences might be expected based on presumed cultural changes over a hundred years or more, Taylor and Smith (1978:352) indicated that postdepositional factors may have affected the Piedmont Survey Pattern. For example, they cautioned that the high frequencies of kitchen artifacts might be a result of their greater visibility. Due to their white or brightly colored nature, ceramics were more visible than rusted metal items such as nails and thus were collected more frequently. Ceramics were also more durable relative to metal objects which were subject to decomposition in the acidic clay soils in their survey area, thus inflating ceramic counts relative to metal objects. Finally, one other difference sets the assemblages apart: the Piedmont Pattern was derived from surface-collected data whereas South's artifact patterns were generated from excavated data.

As the authors also point out, it will take controls provided by excavations of 19th and early 20th century sites with structural remains and features to better interpret the degree to which natural processes or agricultural practices may have affected the resulting artifact patterns found in plowed fields. Data from one such excavated site in Orange County can be used to partially examine this question (Daniel and Ward 1993). The artifact assemblage recovered from testing the Davis site is categorized according to South's groupings in Table 5.10. Comparison of the Piedmont Pattern which is very similar to the pattern from Back Creek, does suggest that excavated assemblages do differ from surface-collected assemblages (Figure 5.8). Of specific interest is the strong difference between the frequencies of Kitchen and Architectural artifacts. The latter group, in particular, is largely made up of nails from the Davis site which indicates that artifact preservation and visibility may be a factor in interpreting surface-collected data, as Taylor and Smith suggested. This is only a tentative conclusion since the Davis site pattern will need to be compared with that derived from sites excavated in the future. Whatever the outcome, it is evident that additional work is needed to properly interpret the nature of 19th and early 20th century Piedmont artifact scatters in the absence of structural remains or other historic features.

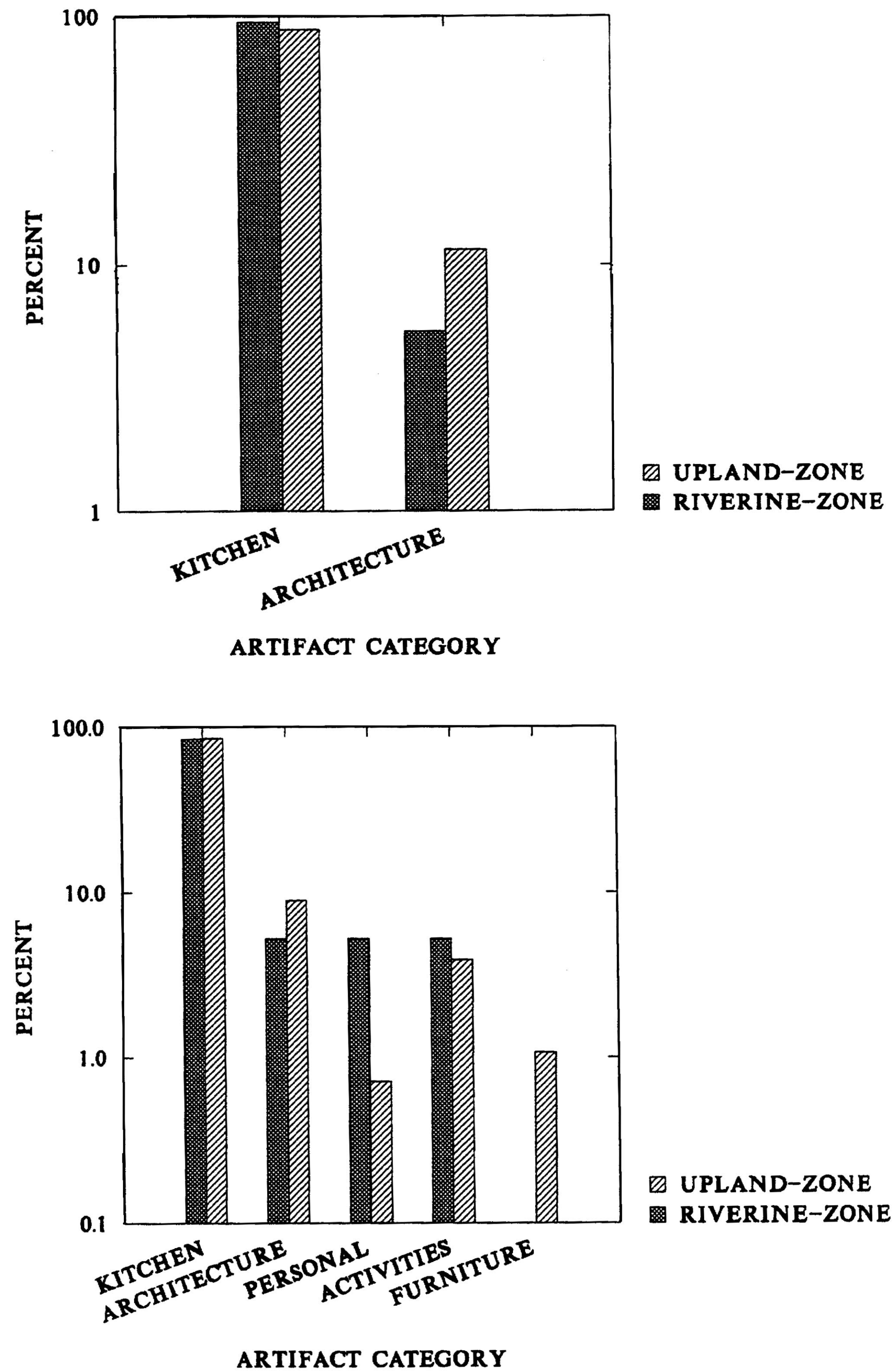


Figure 5.7. Historic artifact assemblages for Little River (top) and Back Creek (bottom), based on Table 5.9.

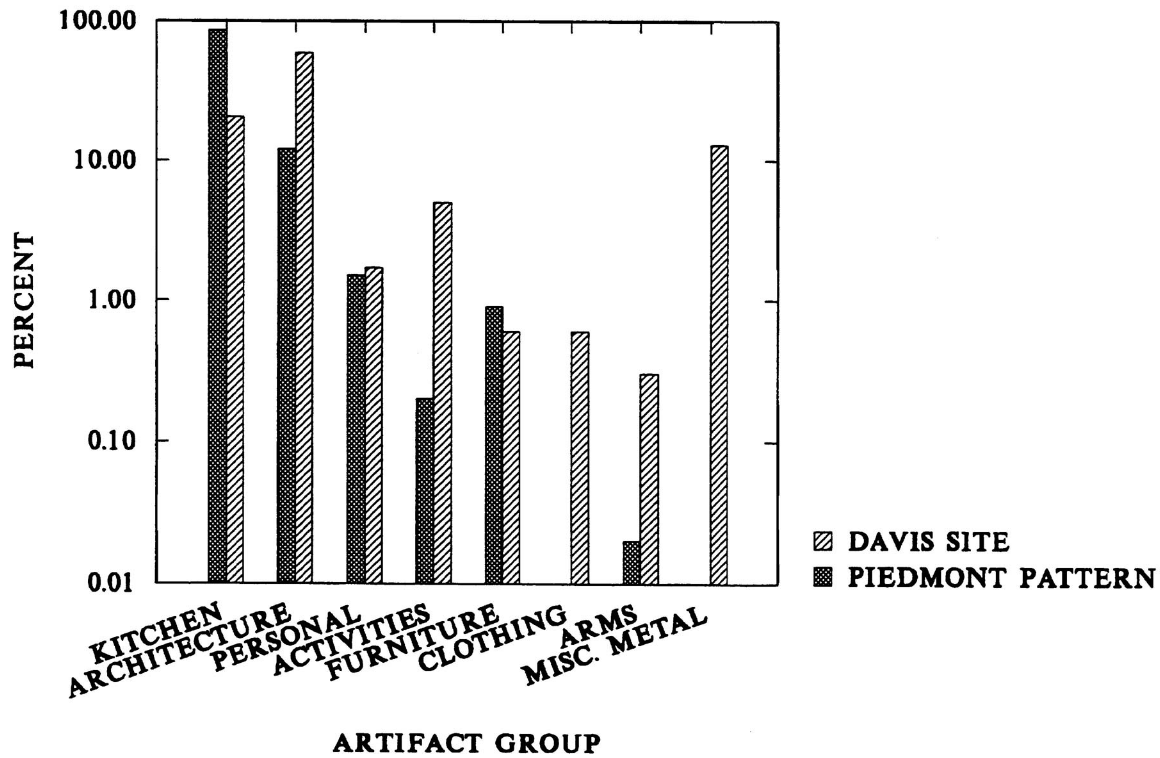


Figure 5.8. Comparison of Piedmont Survey Pattern and Davis Site assemblage pattern.

Table 5.10. Artifact Assemblage From the Davis Site.[1]

Kitchen n	Kitchen %	Archi-tectural n	Archi-tectural %	Personal n	Personal %	Activities n	Activities %	Furniture & Furnishings n	Furniture & Furnishings %	Clothing n	Clothing %	Arms n	Arms %	Misc. Metal n	Misc. Metal %	Totals n	Totals %
73	20.4	209	58.5	6	1.7	18	5.0	2	.6	2	.6	1	.3	46	12.9	357	100.0

DUKE FOREST

As discussed in Chapter 4, portions of Duke Forest were chosen for judgmental survey due to the presence of several 19th and early 20th century homesteads (Figure 5.9). Although little systematic archaeological survey has been done in Duke Forest, the locations of these homesteads have been recorded over the years by Duke Forest personnel. Several of these sites are still marked by above-ground remains and were visited and evaluated to provide additional data concerning the nature of historic sites in Orange County. The results of this fieldwork are summarized below.

Background

In the mid-1920s, Duke University acquired several parcels of land to act as a buffer for the university and for investment purposes. The acquired tracts consisted of small farms and forested land which became the focus of a managed forestry program in 1931. Since then, additional land has been acquired and today Duke Forest covers about 3360 ha (8,300 acres) in six divisions (Durham, Korstian, Blackwood, Eno, Hillsboro, Haw River) and two tracts (Dailey, and Dodson's Crossroads). These parcels occur primarily in Durham and Orange Counties with lesser area in Alamance and Chatham Counties. Today, under the management of the School of Forestry and Environmental Studies, Duke Forest is used for educational and scientific purposes in a variety of disciplines including forestry, ecology, and the environmental sciences. Although no active archaeological work is a part of the forest program, one of the management objectives of the school is the protection of significant archaeological sites (Bollinger 1980).

Survey Strategy

The strategy used during this portion of the survey was very straightforward. Using Duke Forest maps with plotted site locations, we relocated 15 previously known sites. In addition, 3 previously unknown sites were also discovered while relocating plotted sites. Once a site was located, information concerning the type of remains was recorded and a sketch map was made. If the site contained any structural remains, the number and dimensions of these remains were recorded. In only a few cases were any collections made, primarily due to the scarcity of observed artifacts (Appendix B). This scarcity, however, may be more apparent than real, given the vegetation and leaf litter covering the sites. A similar forested setting, for example, obscured most of the two-room stone foundations of the late 19th century Davis site, where a wealth of cultural material was uncovered by simply clearing the foundations and raking the ground surface (Daniel and Ward 1993).

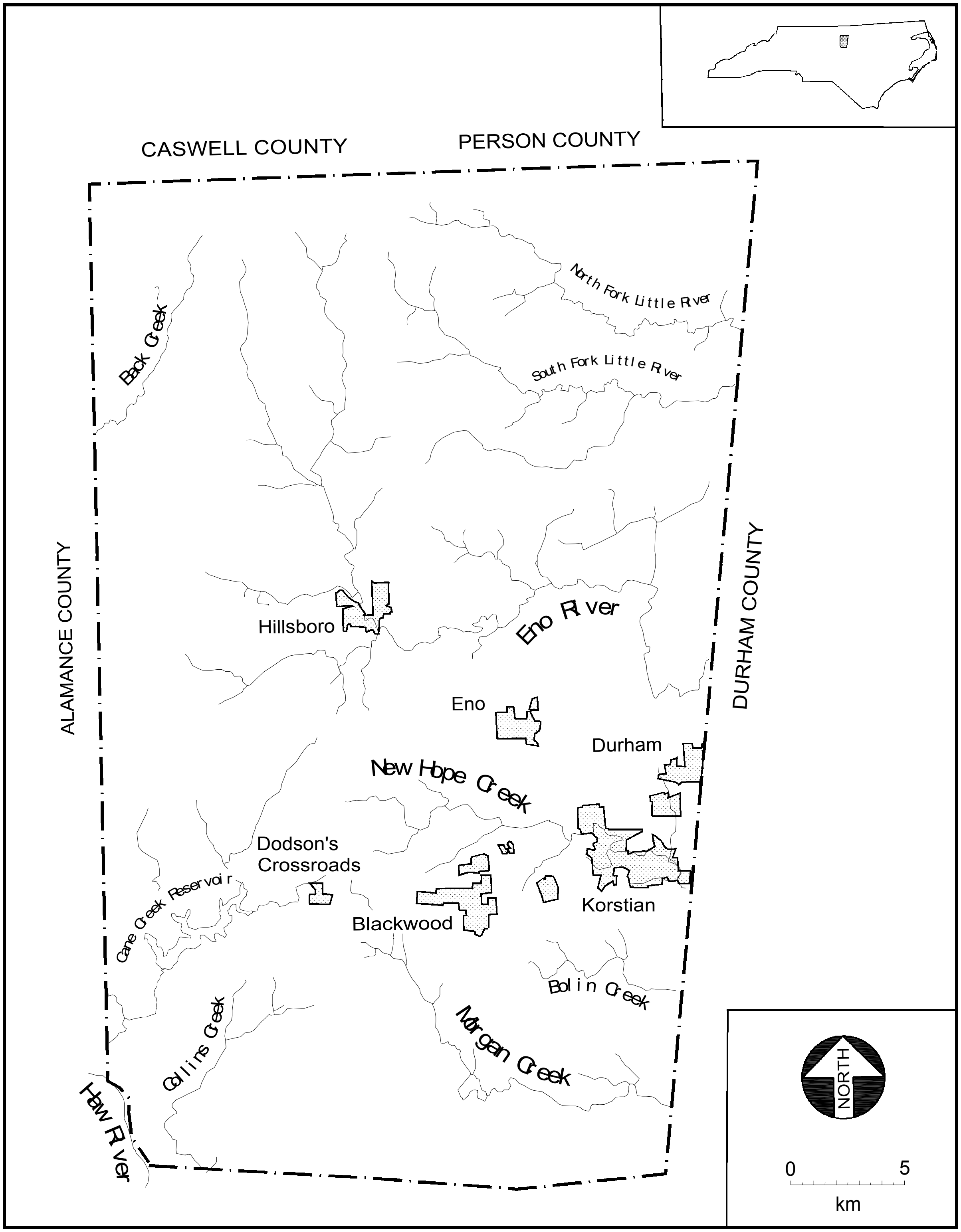


Figure 5.9. Locations of Duke Forest tracts in Orange County.

Survey Results

The sites recorded in Duke Forest were divided into four categories: (1) homesteads, (2) cemeteries, (3) mills, and (4) dams. Each of these site categories is summarized below. One type of historic feature, however, that was not recorded as a site included several rock walls observed in the Korstian Division (although their locations were noted on Duke Forest maps). These walls were built on hill slopes at various points across tributaries of New Hope Creek. Some of these features were quite substantial and were probably built by farmers during the 19th century to check soil erosion (Judson Edeburn, personal communication, 1994). Similar historic features are not uncommon in the Piedmont (see Goodyear et al. 1979:44; House and Ballenger 1976:142).

Homesteads. Homesteads represent the predominant site category located during the fieldwork (n=14). Generally these sites were characterized by stone foundations representing one- and sometimes two-room structures associated with one or, less frequently, two chimney falls. At least three of these foundations also contained cellars and at least one and perhaps two of these sites also had cemeteries associated with them. A summary of the number, dimensions, and other archaeological features associated with these sites is listed in Table 5.11.

Cemeteries. Four cemeteries were recorded during the fieldwork. Site OR436 included at least 15 graves noted in a 20 x 11 m strip in the Korstian Division. Leaf cover made an exact count difficult since most of the graves were marked by simple fieldstones only a few inches high. One large grave stone was marked, however, recording the death of Mann Jenkins in 1856. An additional modern plaque commemorating a 1986 death--but no burial--mysteriously appeared in the cemetery in 1990 (Judson Edeburn, personal communication, 1994).

Site OR430 is also located in the Korstian Division with at least 10 graves. Four of the tombstones were engraved with the name Robson; the remaining graves were marked by small unmarked fieldstones (Figure 5.10). Moreover, three graves had rather deep secondary depressions raising the possibility of reburial elsewhere or grave looting. The earliest death recorded on these tombstones was dated 1817. This cemetery is probably associated with OR431, a two-room stone foundation located some 150 m to the east (Figure 5.11).

Site OR296, located in the Blackwood Division, was the largest cemetery recorded in the forest. Actually, this site may be two cemeteries; one with a stone lined wall and another apparently larger burial ground immediately outside the stone lined enclosure. Only three small unmarked fieldstones were observed inside the stone wall enclosure, but this enclosure is heavily overgrown and could easily obscure such small fieldstones. Another 21 small fieldstones lie just north of the enclosure in two closely spaced rows (headstones and footstones?) running for about 18 m north of the stone wall enclosure. In any case, these graves are associated with the remains of the Hogan farm, as described below.

Site OR454 was the smallest cemetery recorded during the survey. It was located in the Hillsboro Division and contains remains of the Mayo family (Judson Edeburn, personal communication, 1994). It included four graves in a row, three of which had small headstones and footstones. An additional grave was also observed but marked only by the presence of a relatively deep depression.

Figure 5.10. Site OR430, Robson family cemetary.

Figure 5.11. Site OR431, stone foundations (Robson house?).

Table 5.11. Dimensions of Selected Historic Structures in Duke Forest.

Site: Structure	Size (ft) Room 1	Room 2	Comments	Duke Forest Division
OR449				
Structure 1	15 x 15	30 x 15 (?)	1 stone chimney in middle of two rooms?	Durham
OR450				
Structure 1	23 x 16.5		1 stone chimney (log cabin)	Durham
Structure 2	37 x 16		2 brick chimneys (two story)	
Structure 3	12 x 10		frame structure (out building)	
OR451				
Structure 1	22 x 21		1 stone chimney	Durham
OR433				
Structure 1	15 x 15	16 x 15	1 stone chimney	Korstian
OR434				
Structure 1	35 x 19	25 x 11 (?)	2 stone chimneys with room 1	Korstian
Structure 2	10 x 10		outbuilding	
OR431				
Structure 1	22 x 18	24 x 18	each room has stone chimney large room has cellar	Korstian
OR432				
Structure 1	20 x 20		1 stone chimney; cellar	Korstian
OR452				
Structure 1	22 x 18		1 stone chimney	Korstian
OR453				
Structure 1	50 x 40		2 stone chimneys, stone lined well	Korstian
OR435				
Structure 1	20 x 18	18 x 18	each room has stone chimney	Korstian
OR437				
Structure 1	15 x 11		1 stone chimney; cellar	Korstian
OR296				
Structure 1	20 x 20		outbuildings?	Blackwood
Structure 2	20 x 20		outbuildings?	
OR455				
Structure 1	?		house moved, brick steps remain	Hillsboro
OR456				
Structure 1	18 x 15		1 stone chimney	Durham
Structure 2	12 x 12		outbuilding	

Mill. The remains of a mill (OR429) were located on the west banks of New Hope Creek in the Korstian Division. Only a shell of the two-story structure remains some 11 by 9 m in size (Figure 5.12). Remnants of the stone dam associated with the mill can be seen about 90 m up river on both sides of the creek. The beginnings of the mill race are also present on the west side of the creek just north of the dam.

Duke University excavated some trenches inside the mill over 15 years ago (Younger 1977; but cf. Hartley 1977). Unfortunately, only a very preliminary statement has been written concerning the results of this work basically describing the size of the mill, mill race, and dam.

Mill Dams. Three dams all located within about 500 m of each other were located along New Hope Creek on the eastern edge of the Korstian Division. The largest of these dams (OR438) is a substantial rock wall over 4 m tall and several meters thick; it runs about 30 m spanning New Hope Creek just west of Erwin Road (Figure 5.13). The other two dams (OR439 and OR440) were located just upriver from OR438 and are considerably smaller. It is unknown what the relationship of these features are to the structure upstream or to each other.

One of these dams (OR439) is apparently the foundations of a "crib dam." Although totally submerged the foundation clearly could be seen on the river bottom at the time of survey. Crib dams were a reliable but economical method of damming relatively narrow streams. They were constructed of an interlocking framework of heavy timber boxes filled with stone, brush, gravel, sand, or clay. Usually the foundations were placed in bedrock at right angles to streamflow and bolted to the rock with iron pins. It is such a foundation of timbers filled with rock that appear to be the submerged feature at OR349 (Thomas Hargrove, 1994, personal communication). Although mill sites have received very little archaeological attention in the region, the remains of at least one 19th century mill site (Boyce Mill) with a crib dam has been investigated on the Neuse River in northwestern Wake County (Hargrove and Hammond 1981).

Discussion

The numerous homesteads in Duke Forest are unique due to the preservation that has been afforded them since the early 20th century. Although lacking any architectural significance, these sites provided structural data that could not be obtained from surveying plowed fields. Moreover, the location of the mill, mill race, and dams along New Hope Creek are a reminder of the presence of other historic structures and features that will not be found in upland fields. As the historical review in Chapter 3 indicated, several mills were scattered along the county's waterways during the late 19th century.

Presumably, most these sites date to the 19th or early 20th century. Undoubtedly, the Duke Forest sites contain significant archaeological data that could inform on the history and lifeways of early Piedmont farm life. In fact, some preliminary documentary work has been done on two farmsteads recorded in this survey that, when completed, could act as a foundation for formulating research questions concerning life in 19th century Orange County. One such farmstead is present in the Couch Tract, a small out-parcel in the southwest corner of the Durham Division. Five generations of the Couch family lived in this area beginning with Thomas Couch who settled on a 120 ha (300 acre) subsistence farm just west of this tract in the mid 18th century. This land, and additional property acquired by

Figure 5.12. Site OR429, mill remains (view west).

Figure 5.13. Site OR438, mill dam (view northwest).

Couch and his descendants was farmed for almost 200 years until soil erosion and soil exhaustion forced the farm's eventual collapse (Frankel 1984). At one point before its collapse, however, the farm produced a marketable surplus of corn and wheat. In fact, during the first half of the 19th century, the Couch property would have been regarded as a small plantation as it covered 678 ha (1600 acres) and included 25 slaves (Frankel 1984:18-19).

The portion of the Couch land that is represented by the Couch tract appears to have been settled at least by the mid nineteenth century. A complex of four home places including the partial remains of a log cabin were recorded during the fieldwork. Two of these home sites (OR449 and OR451) are relatively small stone foundations with stone chimney falls (Figures 5.14-5.15). The third site (OR450) is actually a complex of the remains of at least three structures (Figures 5.16-5.17). This complex includes a partially standing log cabin and an associated small frame shed with a tin roof just a few meters to the south. Further work needs to be done to verify when this cabin was built, but it would appear to be the residence of John W. Couch who inherited the tract from his father William Couch (the grandson of Thomas Couch) when he died in 1856. It is also possible that the cabin was built by William Couch himself, in which case the home would have been erected sometime after 1832 when William inherited some 340 ha (850 acres) including the Couch Tract from his father, Thomas Couch, Jr.

Approximately 12 m north of the cabin lie the stone foundations and chimney remains of a two story house that burned just a few years ago (Judson Edeburn, personal communication, 1994). This house was probably built around the turn of the century as Nettie Couch, the daughter of John Couch, is said to have "rented the upstairs of her two-story house to an elderly woman" after her father's death in 1917 (Frankel 1984:80). In addition, an early 20th century house that needs to be evaluated architecturally is located on the northwest portion of this tract and belonged to J.W.T. Couch, Nettie's brother (Frankel 1994).

By 1920, Nettie was the only one of four siblings living on the property. It appears that in the wake of declining production, her siblings decided to leave the farm and began to rent the property to tenant farmers. But tenancy brought its own problems. The Couchs could not find tenants who could reliably pay the rent nor take proper care of the farm. These difficulties, combined with the burden of paying land taxes and other expenses, began to put the Couch siblings in debt. It is little wonder, then, that when Duke University offered to buy the Couch's property in 1947 they willingly agreed to sell.

Similarly, some background information is also available for the Alexander Hogan farm--a mid to late 19th century plantation--located in the southern portion of the Blackwood Division (OR296). Historical research concerning this property, including oral history from family descendants, is currently being done by Scott Franklin who graciously provided a summary of his work. Archaeologically, site OR296 is represented by two stone foundations and a nearby cemetery that was described above. The two foundations are substantial, about 6 sq m, and lie adjacent to each other. They are located about 11 m east of the southern edge of the cemetery. The apparent absence of any chimney remains would suggest that these foundations were not domestic remains. Franklin's research indicates that they were outbuildings, perhaps barns.

The Hogan residence was probably located about 120 m south of the cemetery. Presently, it is in a power-line right of way, marked by a pile of house rubble. It was described as a large two-story white plank house and was probably built in the mid-nine-

Figure 5.14. Site OR449, chimney fall.

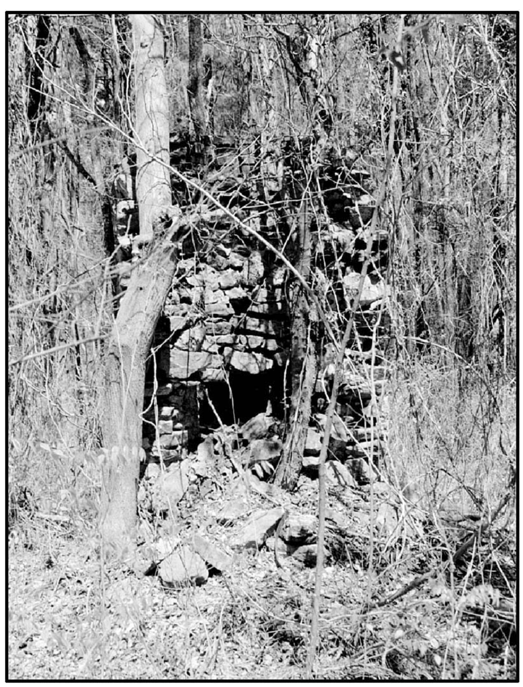


Figure 5.15. Site OR451, chimney fall.

Figure 5.16. Site OR450, Structure 1.

Figure 5.17. Site OR450, Structure 2.

teenth century by Alexander Hogan. Hogan's plantation covered about 150 ha (380 acres), one third of which was improved land.

Alexander Hogan married Matilda Robson in 1854. They had at least eight children, some of which died at a young age and were probably buried inside the walled portion of cemetery. Hogan also had 13 slaves to work his farm and their graves may be the ones located outside the stone enclosure. Alexander died in 1872 and Matilda died sometime after 1890. It was also about this time that some former Hogan slaves bought portions of the Hogan property and their descendants live in the area today.

This brief summary of just two family tracts and their more obvious archaeological remains should readily demonstrate the unique potential for historic archaeology that exists in Duke Forest. As paradoxical as it may sound, we probably know less about the archaeological record of the Historic period than many of the prehistoric periods of the county. While some historic descriptions and other written data exist for 19th century life in rural Orange County, none of these are archaeological descriptions based upon the material record of antebellum and postbellum piedmont life. In particular, much of the black American role in plantation life--and early American history in general--is recorded in the archaeological record rather than the written one (e.g., Deagan 1991; Ferguson 1992).

Initially, these sites could contribute substantive data concerning the form, content, and function of 19th century artifact assemblages (cf. South 1977). Such data could also be used to examine potential diachronic changes between antebellum and postbellum artifact assemblages. Moreover, given the preservation of these sites, spatial data could also be obtained concerning the arrangement of structures and activities that took place in these settlements. Spatial studies could also be undertaken at a county level as well and this is one aspect of the Duke Forest sites that should be emphasized. Our knowledge of Historic period adaptations would be greatly enhanced by studying these sites as a complex of settlements that were undoubtedly related socially and economically. In short, it is likely that most of these sites are eligible for inclusion in the National Register of Historic Places. Remember, too, that the sites recorded here do not represent all of the known historic sites in Duke Forest. About a dozen other sites with structural remains are known (Judson Edeburn, personal communication, 1994); and unknown others probably await discovery.

In sum, given their unique state of preservation, the archaeological potential of these sites seems great. Moreover, in combination with further documentary research, a unique opportunity exists for studying the lifeways of the North Carolina piedmont farmer during the early history of Orange County.

Chapter 6

CONCLUSIONS

The preceding analyses focused on archeological sites located in the northern part of the county. In this final chapter, those results will be compared with existing data concerning the abundance and variety of archaeological remains elsewhere in the county. Together, this information is used to generate a preliminary model of the distribution of archaeological remains throughout the county to be used as a cultural resource management tool.

To aid in this comparison a sample of 140 previously recorded archaeological sites with relatively precise locational data were selected from the Research Laboratories of Anthropology site file. Table 6.1 lists these sites along with their drainage location, topographic setting, and components identification. Sites were classified by drainage identifying the primary creek or river with which the site was associated. Each site was also classified by one of three topographic settings: hill or ridgetop, bottom (floodplain), and natural terrace. Finally, the components present at each site were listed as identified on the site form or in some cases inferred from the listed point or ceramic types. In other instances no temporally diagnostic artifacts were listed and these sites were classified only as Lithic or Ceramic. In the latter case, the component could be presumed to postdate the Archaic. In the former case, the presence of only stone artifacts probably indicates an Archaic association, but it should not be presumed for every case.

Certain biases, of course, are present in this data and should be noted. For example, this list does not represent a probabilistic sample in the sense of the survey reported here. As noted in Chapter 3, sites have been recorded for over 50 years in Orange County under a variety of conditions. Thus, the data from each of these drainages are not comparable in a statistical sense. Despite this limitation some trends can be noted and, when combined with the results from this project, some general statements concerning site distributions can be made.

First, it is clear that sites are distributed across the county. In fact, archaeological remains have been located in every major creek or river watershed in Orange County. This pattern is largely due to the presence of Archaic period sites. Of the 140 sites in Table 6.1, 35.7% (n=50) have at least one Archaic component, the vast majority of which are either Middle or Late Archaic (or both). In addition, another 37.8% (n=53) of the sites are listed simply as Lithic, many of which probably contained an Archaic component. Moreover, this category represents the most frequently recorded type of archaeological remains in the county. Consistent with this pattern, most of the archaeological remains encountered during this project were nondescript lithic scatters.

Fewer sites with prehistoric components postdating the Archaic are known in the county. Only 21 sites (15%) have Woodland components while 19 (13.5%) sites have Late Prehistoric to Contact period components. At first glance, these data would suggest that Woodland and Late Prehistoric settlement of the county was less frequent or intense than Archaic period use. But, this interpretation should be viewed cautiously since, as noted above, the county has not been sampled in such a way to allow such comparisons. As

Table 6.1. Site location and components.[1]

RLA Site No.	Drainage	Component	Setting
OR1	Morgan Creek	Middle Archaic, Early Woodland	hill-ridgetop
OR2	Bolin Creek	Early-Late Archaic, Middle-Late Woodland	hill-ridgetop
OR3	Morgan Creek	Middle-Late Archaic	hill-ridgetop
OR4a	Morgan Creek	"ceramic", "lithic"	hill-ridgetop
OR4b	Morgan Creek	"ceramic", "lithic"	hill-ridgetop
OR4c	Morgan Creek	"ceramic", "lithic"	hill-ridgetop
OR4d	Morgan Creek	Early Archaic-Late Prehistoric?	hill-ridgetop
OR4e	Morgan Creek	Early Archaic-Late Prehistoric?	hill-ridgetop
OR5	Morgan Creek	Early-Late Archaic	hill-ridgetop
OR6	Morgan Creek	Middle-Late Archaic	bottom
OR7	New Hope Creek	Middle-Late Archaic, Early Woodland	hill-ridgetop
OR8	Bolin Creek	Middle-Late Archaic, Early-Middle Woodland	hill-ridgetop
OR9	Morgan Creek	Early-Late Archaic, Late Prehistoric	hill-ridgetop
OR10	Morgan Creek	Early-Late Archaic, "ceramic"	hill-ridgetop
OR11	Eno River	Protohistoric	bottom
OR12	Eno River	Early Archaic, Early Woodland, Late Prehistoric	bottom
OR13	New Hope Creek	Late Archaic, Late Prehistoric	bottom
OR14	Eno River	Middle-Late Archaic, Early-Middle Woodland, Late Prehistoric	bottom
OR15	New Hope Creek	Late Archaic	hill-ridgetop
OR16	New Hope Creek	Middle-Late Archaic	hill-ridgetop
OR17	Eno River	Early Archaic, Late Archaic, Late Prehistoric	hill-ridgetop
OR18	Eno River	Middle Archaic, Early-Middle Woodland	hill-ridgetop
OR19	Bolin Creek	Middle Archaic, Early-Middle Woodland	hill-ridgetop
OR20	Cane Creek	Early Archaic, Late Archaic	hill-ridgetop
OR21	Morgan Creek	Middle Archaic, Early Woodland, Late Prehistoric	hill-ridgetop
OR22	Morgan Creek	Middle-Late Archaic, Middle-Late Woodland	hill-ridgetop
OR23	Eno River	Early-Middle Archaic, "ceramic"	hill-ridgetop
OR24	Bolin Creek	Early-Late Archaic, Late Prehistoric	hill-ridgetop
OR25	Bolin Creek	Early Woodland	hill-ridgetop
OR26	Bolin Creek	Late Archaic	hill-ridgetop
OR27	Morgan Creek	Middle-Late Archaic, "ceramic"	hill-ridgetop

(continued)

[1] RLA numbers OR1-OR219 and OR222-244 correspond to OSA sites with the same numbers. RLA site number OR221 is OSA site number OR245. RLA site numbers OR246-OR248 correspond to OSA sites numbered OR248, OR247, and OR249 respectively. RLA site numbered OR255 corresponds to OSA site numbered OR296; RLA sites numbered OR252-OR254 correspond to OSA sites numbered OR297-OR299 respectively. No OSA site numbers exist for RLA sites OR245, OR249, OR250, OR251, and OR256.

Table 6.1. Site location and components *(continued)*.

RLA Site No.	Drainage	Component	Setting
OR28	Morgan Creek	Middle-Late Archaic, "ceramic"	hill-ridgetop
OR29	Morgan Creek	Middle Archaic	hill-ridgetop
OR30	Bolin Creek	"ceramic", "lithic"	hill-ridgetop
OR31	Bolin Creek	"lithic"	hill-ridgetop
OR32	Bolin Creek	"lithic"	hill-ridgetop
OR33	Morgan Creek	"lithic"	hill-ridgetop
OR34	Morgan Creek	"lithic"	hill-ridgetop
OR35	Morgan Creek	"lithic"	hill-ridgetop
OR36	Morgan Creek	"lithic", "ceramic"	hill-ridgetop
OR37	Morgan Creek	"lithic"	bottom
OR40	Morgan Creek	"lithic"	hill-ridgetop
OR41	Morgan Creek	"lithic"	hill-ridgetop
OR42	Bolin Creek	"lithic"	hill-ridgetop
OR43	New Hope Creek	"lithic"	hill-ridgetop
OR44	New Hope Creek	"lithic"	hill-ridgetop
OR45	Eno River	"lithic"	hill-ridgetop
OR46	Eno River	"lithic"	hill-ridgetop
OR47	Morgan Creek	"lithic"	hill-ridgetop
OR49	Morgan Creek	Early Archaic, Late Archaic	hill-ridgetop
OR50	Collins Creek	"lithic"	hill-ridgetop
OR51	Morgan Creek	"lithic"	hill-ridgetop
OR53	New Hope Creek	"lithic"	hill-ridgetop
OR166	Cane Creek	"lithic"	hill-ridgetop
OR167	Cane Creek	"lithic"	hill-ridgetop
OR168	Cane Creek	"lithic"	hill-ridgetop
OR169	Cane Creek	"lithic"	hill-ridgetop
OR170	Cane Creek	"lithic"	hill-ridgetop
OR171	Cane Creek	"lithic"	hill-ridgetop
OR172	Cane Creek	"lithic"	hill-ridgetop
OR173	Cane Creek	Historic	hill-ridgetop
OR174	Eno River	"lithic"	hill-ridgetop
OR175	Eno River	"lithic"	hill-ridgetop
OR176	Eno River	"lithic"	hill-ridgetop
OR177	Bolin Creek	"lithic"	hill-ridgetop
OR178	Bolin Creek	Historic	hill-ridgetop
OR180	Eno River	"lithic"	hill-ridgetop
OR181	Cane Creek	"lithic"	hill-ridgetop
OR182	Collins Creek	"lithic"	hill-ridgetop
OR183	Little River	"lithic"	hill-ridgetop
OR184	New Hope Creek	Archaic	hill-ridgetop
OR185	New Hope Creek	Late Archaic	hill-ridgetop
OR186	New Hope Creek	Late Archaic	hill-ridgetop
OR187	New Hope Creek	Late Archaic	hill-ridgetop
OR188	New Hope Creek	Late Archaic	hill-ridgetop
OR189	New Hope Creek	Late Prehistoric	hill-ridgetop
OR190	Eno River	"lithic"	hill-ridgetop
OR191	New Hope Creek	Historic	hill-ridgetop
OR192	Eno River	"lithic"	hill-ridgetop
OR193	Eno River	Middle Archaic	bottom
OR194	Eno River	"lithic"	hill-ridgetop
OR195	New Hope Creek	"lithic"	hill-ridgetop

(continued)

Table 6.1. Site location and components *(continued)*.

RLA Site No.	Drainage	Component	Setting
OR196	Eno River	"lithic"	hill-ridgetop
OR197	Cane Creek	"lithic"	hill-ridgetop
OR198	Cane Creek	Late Archaic	hill-ridgetop
OR199	Cane Creek	"lithic"	hill-ridgetop
OR200	Cane Creek	"lithic"	hill-ridgetop
OR201	Cane Creek	"lithic"	hill-ridgetop
OR202	Cane Creek	Historic	bottom
OR203	Cane Creek	"lithic"	hill-ridgetop
OR204	Cane Creek	Middle Archaic	hill-ridgetop
OR205	Cane Creek	"lithic"	hill-ridgetop
OR206	Cane Creek	"lithic"	hill-ridgetop
OR207	Cane Creek	Middle-Late Archaic	hill-ridgetop
OR208	Cane Creek	Late Archaic	hill-ridgetop
OR209	Cane Creek	Historic	hill-ridgetop
OR210	Cane Creek	Historic	bottom
OR211	Cane Creek	Historic	bottom
OR212	Cane Creek	Historic	hill-ridgetop
OR213	Cane Creek	Historic	hill-ridgetop
OR214	Cane Creek	Historic	hill-ridgetop
OR216	Collins Creek	"lithic"	hill-ridgetop
OR217	Morgan Creek	"lithic"	hill-ridgetop
OR218	Morgan Creek	Late Archaic	hill-ridgetop
OR219	Eno River	"lithic"	hill-ridgetop
OR221	Collins Creek	"lithic"	hill-ridgetop
OR222	Terrels Creek	Archaic	hill-ridgetop
OR223	New Hope Creek	"lithic"	hill-ridgetop
OR224	New Hope Creek	Early-Late Archaic	hill-ridgetop
OR225	Bolin Creek	Early Archaic-Late Prehistoric	hill-ridgetop
OR226	Bolin Creek	Middle Archaic-Late Woodland	hill-ridgetop
OR227	Eno River	Late Prehistoric	hill-ridgetop
OR228	Eno River	"lithic"	Terrace
OR229	Eno River	Woodland	hill-ridgetop
OR230	Haw River	Archaic, Late Woodland	Terrace
OR231	Eno River	Contact	bottom
OR232	Eno River	Contact?	bottom
OR233	Eno River	Late Woodland	bottom
OR234	Morgan Creek	Early Archaic-Middle Woodland	bottom
OR235	Eno River	Late Woodland-Late Prehistoric?	Terrace
OR236	Eno River	Middle Archaic-Late Woodland	hill-ridgetop
OR237	Eno River	"lithic"	hill-ridgetop
OR238	Haw River	Middle Archaic-Late Archaic	hill-ridgetop
OR239	Eno River	Protohistoric	hill-ridgetop
OR240	Haw River	Archaic	hill-ridgetop
OR241	Morgan Creek	Archaic	hill-ridgetop
OR242	Cane Creek	Archaic	hill-ridgetop
OR243	New Hope Creek	Middle-Late Archaic, Late Prehistoric	hill-ridgetop
OR244	New Hope Creek	Early Archaic, Late Archaic	hill-ridgetop
OR245	Bolin Creek	Late Archaic, Late Prehistoric	hill-ridgetop
OR246	Eno River	Late Woodland	bottom
OR247	Eno River	Late Woodland	bottom

(contintued)

Table 6.1. Site location and components *(continued)*.

RLA Site No.	Drainage	Component	Setting
OR248	Morgan Creek	"lithic"	bottom
OR249	Back Creek	Paleoindian, Early Archaic-Middle Archaic	hill-ridgetop
OR250	Back Creek	Woodland	hill-ridgetop
OR251	Cane Creek	Archaic	hill-ridgetop
OR252	New Hope Creek	Historic	hill-ridgetop
OR253	Bolin Creek	Historic	hill-ridgetop
Or254	New Hope Creek	Historic	hill-ridgetop
OR255	Bolin Creek	Historic	hill-ridgetop
OR256	Morgan Creek	Middle Archaic	hill-ridgetop

discussed in Chapter 6, the results of our survey suggests that aboriginal land use in the county varied throughout prehistory both within and between drainages.

Second, virtually all of the prehistoric sites were recorded along the fringes of drainages, in what would be comparable to the riverine zone defined in our survey. The absence of sites recorded in the more upland areas of watersheds, however, probably reflects the lack of attention this area has received rather than any real absence of sites. As the results of this survey have demonstrated, the upland zones along Little River and Back Creek also contained archaeological remains, but these remains were less dense than along the main drainages. As also noted in Chapter 6, there appears to have been a functional difference in how riverine versus upland areas were used prehistorically. This conclusion can be generalized to include the other county drainages. To ignore other upland areas simply because they have a less frequent occurrence of cultural remains would decrease significantly our ability to understand prehistoric settlement in the area.

The absence of upland survey notwithstanding, one pattern that does seem established for aboriginal settlement after AD 1000 is that of village sites being located along fertile river bottoms (Table 6.1). This conclusion is drawn from the results of Simpkins and Petherick (1985) efforts to model late aboriginal settlement in the Eno, Haw, and Dan River Valleys. Although the survey strategy was nonprobabilistic, it was soundly based on a compilation of existing data, collector interviews, and ethnohistoric research. In all, 69 areas totaling 95 ha (234 acres) were surveyed in Alamance, Chatham, Durham, and Orange Counties. Within Orange County, 13 ha in 11 areas were surveyed. These areas were located along the central and eastern portions of the Eno River, the eastern portions of New Hope and Morgan Creek, and the Haw River (Simpkins and Petherick 1985:Figure 1). Consequently, 55 new sites were recorded during the survey, 11 of which were in Orange County.

Simpkins and Petherick's results and the subsequent excavations discussed in Chapter 3 have revealed that the Eno River was clearly a focus of late prehistoric habitation. Major settlements were limited to floodplain settings which are few and limited in extent; stream confluences followed bottom lands in importance (Simpkins and Petherick 1985:84-86). Consistent with this pattern was the discovery of OR354 described in Chapter 6, along a small stretch of floodplain on the banks of the South Fork of the Little River. The Little River, like the Eno, is a tributary of the Neuse River. Although both forks of the Little

River in Orange County are relatively small streams, their channels widen at the very eastern edge of the county where OR354 is located. One contribution of the present study, then, is the identification a significant Late Prehistoric settlement in the northern portion of Orange County.

The Haw River and its tributaries were also a focus of late aboriginal occupation (Simpkins and Petherick 1985:87). Like the Eno, the Haw is relatively young stream with few well-formed floodplains. Natural levees, floodplains, and ridges overlooking floodplains were a focus of settlement along its main channel. Although only a very short segment of the Haw flows along the southwest border of the county, several sites have been recorded there (Table 6.1). Three tributaries of the Haw--New Hope, Bolin, and Morgan Creeks--are present to a greater extent in the southeastern corner of the county; large sites have been recorded along these waterways, located on terraces and ridges overlooking more prominent bottom lands (Table 6.1). Sites were also present in bottoms but none appeared as large as those on higher elevations. Presumably these bottoms were more prone to regular flooding than the Eno (Simpkins and Petherick 1985:86-87). The absence of any habitable bottom land along the Orange County portion of Back Creek surveyed during this project likely accounts for its lack of substantial late aboriginal settlement. The late aboriginal remains that were recovered suggests the area was the focus of short-term use, perhaps for hunting tasks.

The above discussion illustrates a third point concerning our understanding of site distribution in Orange County. That is, an accurate picture of prehistoric settlement requires us to identify sites functionally. The identity of site function, of course, cannot be confidently determined using survey data alone and requires excavation. It should not be overlooked that our considerable knowledge of Late Prehistoric settlement patterns, is based on a several extensive excavation projects.

In contrast, virtually no sites that predate AD 1000 have been excavated in the county. Our vague understanding of prehistoric settlement prior to that time reflects that fact. To a certain extent, this lack of excavation may be due to the nature of the sites themselves. That is, site file data indicate that most of these sites were recorded as low-density artifact scatters--a site type that does not usually generate much excitement among archaeologists. Nevertheless, a few sites recorded along Morgan Creek in the vicinity of Mason Farm and Finley Golf Course appear to have had--and perhaps still have--substantial Archaic (and Woodland) occupations. Although information is scant, this area did receive some attention by UNC staff and amateur archaeologists in the early part of the century (data on file in Research Laboratories of Anthropology site files; see also Hargrove 1992). The extent of the disturbance to the archaeological remains in this area is unknown, but this evidence, along with the few significant Archaic sites discovered during this project, suggests that some Archaic deposits in the county may be worthy of further investigation. In short, our understanding of the full range of prehistoric settlement in Orange County should place an emphasis on identifying sites for excavation that predate AD 1000.

Finally, it is also apparent that, until recently, most of the effort spent recording archaeological sites in the county was placed on locating prehistoric rather than historic sites. Prior to this survey, only a handful of historic archaeological sites were known in Orange County (Table 6.1). Given the fact that some 600 historic structures have been recently recorded in the county (many of which must contain an archaeological component) and the archaeological remains identified in Duke Forest, it is apparent that the county is just as rich in historic as in prehistoric remains.

A PREDICTIVE MODEL FOR THE DISTRIBUTION OF ARCHAEOLOGICAL RESOURCES IN ORANGE COUNTY

The ultimate goal of this project has been to provide a predictive model to be used as a planning tool in assessing how future development in the county might impact cultural resources. Therefore, I have extrapolated the results reported here to the entire county to try and predict, with some degree of accuracy, how archaeological resources are distributed within it. This model divides the county into three zones with respect to the density and types of archaeological remains that might be encountered (Figure 6.1):

Zone I

Zone I represents those areas that are likely to contain a high density of archaeological remains. This zone includes all inhabitable bits of river floodplains (circa 100 m wide). Such areas include the central and eastern portions of the Eno. Other potentially inhabitable tracts of bottomland are located on drainages near the eastern edge of the county, including both forks of the Little River and New Hope, Bolin, and Morgan creeks. Similarly, terraces and ridges immediately above floodplains are also included in this zone. In particular, sites in these locations will probably contain late aboriginal settlements with scattered households and associated storage pits, hearths, and burials. Floodplains are also likely locations for historic mills and their associated features. The locations of these historic sites did not require the relatively wider bottomlands that prehistoric settlements needed; however, they would have been located at points along river segments with enough of a gradient to develop a "head" or fall of water, enough exposed rock in the stream bed for a solid dam foundation, and enough rock for dam construction (Heron 1979).

Zone II

Zone II includes the area within about 1 km of the main drainage channels in the county, excluding bottomlands and their immediately bordering terraces and ridges. In particular, the results of our survey indicate that ridges and hilltop within this zone are likely locations for cultural deposits. Most likely, these remains will include lithic and ceramic scatters, but primarily the former. A few of these artifact scatters may be accompanied by subsurface deposits and will be dense enough to represent well-defined sites. Historic period artifact scatters may be present as well. Moreover, some ridges or hilltops may contain historic structural remains in the form of stone foundations or more intact ruins. Other historic features such as cemeteries may also be included in this zone. The better preserved of these remains are most likely to occur in forested tracts.

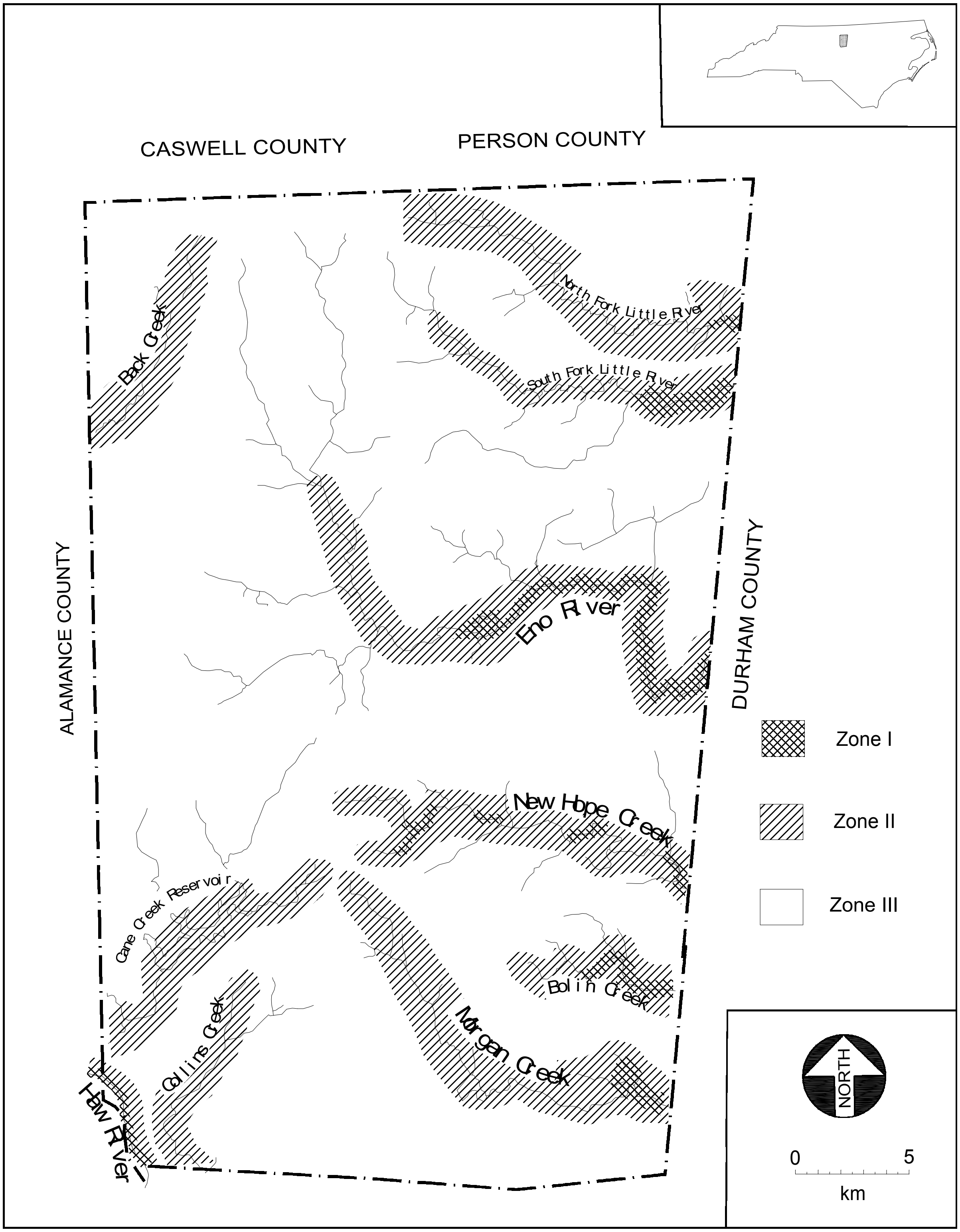


Figure 6.1. The distribution of high (Zone I), medium (Zone II), and low (Zone III) density zones of archaeological remains in Orange County.

Zone III

Zone III includes upland areas not defined by Zones I and II--essentially the remainder of the county. Again, ridges and hilltops within this zone are the most likely topographic locations for archaeological remains which will include surface or shallow artifact scatters, but they will be less dense in nature than their Zone II counterparts. The precise location of such an occurrence is difficult to predict, but judging from the results of this project they will likely occur at stream confluences.

Site Significance

Implicit in the above discussion is that the three zones also rank the potential level of significance of any cultural remains that might be encountered within the county. And while it is possible that Zone I will contain a greater number of potentially significant sites (i.e., potentially eligible for inclusion in the National Register) than either Zones II or III, the conclusion should not be drawn that no significant sites will ever be found in the latter two zones. Rather, potentially significant sites might be present in all three zones, and this determination should be made on a case by case basis.

RECOMMENDATIONS

While some portions of this proposed model probably reflect what many archaeologists working in the area have intuitively understood for some time, it nonetheless provides a formal framework for conducting additional archaeology in the county. Further work should include testing its applicability to other Orange County drainages in order to refine its predictive qualities. For example, at its present level, the model predicts the relative density of archaeological remains within county watersheds. Eventually, it should be possible to rank individual drainages with respect to the density of their archaeological remains. It should also be possible to predict the diversity of cultural remains among county drainages. Furthermore, it would be useful to take other variables into account, such as aspect (i.e., exposure).

This kind of predictive model can be of considerable use to non-archeologists who deal with land management issues. While not a substitute for professional archaeological survey, the model can easily be applied by land-use planners as a basis for identifying potential conflicts between preservation needs and present or future land-use requirements. For example, the December 1993, Orange County Land Use map identifies several land tracts as 10- and 20-year transition zones that will be the focus of new development in the county. These tracts are concentrated in three areas covering four townships. The first concentration of tracts is located in the Chapel Hill townships between Calvander and Interstate 40; the second concentration includes tracts just east and south of Hillsborough spanning both Hillsborough and Eno Townships; and the third concentration is located in the Cheeks Township along a strip paralleling Interstate 85 between Efland and Mebane.

Comparing these locations with the proposed model, allows us to foresee to what degree these transition zones might impact cultural resources. Most of the tracts within the Chapel Hill Township fall within Archaeological Zone I, while tracts within the Hillsborough and Eno townships fall within Archaeological Zones I and II. The tracts within Cheeks Township, on the other hand, primarily fall within Zone III. Based on our predictive model, development in the Chapel Hill tracts are likely to encounter the greatest densities of archaeological remains followed closely by development in the Hillsborough and Eno tracts. Development in the Cheeks tracts, however, will likely effect the least amount of archaeological remains. Future planning can proceed in a manner consistent with the preservation of archaeological resources. Currently, Orange County is in the process of guiding and managing its growth and development while reflecting concerns for the social, economic, and natural environmental conditions throughout all its townships. It is hoped that this document will serve as an additional element of this planning process by providing a framework to include the preservation of the county's archaeological heritage as part of this growth. In this way, it will greatly decrease the chances that significant archaeological

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Appendix A

FIELD CHARACTERISTICS

Field locations and conditions for the survey of the Little river and Back Creek are listed in Table A.1. The location data include field number (ORX06-ORX92), drainage, stratum, and sample unit (see Figures 4.1-4.2). (Fields ORX01-ORX05 were omitted from the analysis due to extremely low surface visibility). Aerial photographs containing more precise field locations can be found in the site file data maintained by the Research Laboratories of Anthropology, University of North Carolina at Chapel Hill. Field conditions are summarized by the degree of surface visibility (in percent), field size, and corrected field area (both in hectares). Field condition data were used to determine artifact densities in the survey region and the reader is referred to Chapters 4 and 6 for further discussion.

Table A.1. Field locations and conditions.

Field No.	Drainage	Stratum	Sample Unit	Visibility (%)	Field size (ha)	Corrected area (ha)
ORX06	Little River	Upland	4	100	1.43	0.86
ORX07	Little River	Riverine	5	80	1.12	0.54
ORX08	Little River	Riverine	5	80	1.12	0.54
ORX09	Little River	Riverine	5	80	0.76	0.37
ORX10	Little River	Riverine	5	40	0.43	0.10
ORX11	Little River	Riverine	5	100	0.88	0.53
ORX12-13	Little River	Riverine	5	80	0.13	0.06
ORX14	Little River	Riverine	5	80	1.42	0.68
ORX15	Little River	Riverine	6	60	1.81	0.65
ORX16	Little River	Riverine	6	40	1.59	0.38
ORX17	Little River	Riverine	5	60	1.54	0.55
ORX18	Little River	Riverine	5	90	1.04	0.56
ORX19	Little River	Upland	21	80	7.65	3.83
ORX20	Little River	Upland	21	80	0.51	0.24
ORX21	Little River	Upland	41	90	0.02	0.01
ORX22	Little River	Upland	41	50	0.44	0.13
ORX23	Little River	Upland	41	90	0.42	0.23
ORX24	Little River	Upland	41	90	8.98	4.85
ORX25	Little River	Riverine	19	50	6.06	1.82
ORX26	Little River	Riverine	19	90	4.39	2.37
ORX27	Little River	Riverine	19	90	1.27	0.69
ORX28	Little River	Riverine	40	90	1.78	0.96
ORX29	Little River	Riverine	53	80	4.11	1.97
ORX30	Little River	Riverine	54	90	0.62	0.34
ORX31-32	Little River	Riverine	54	90	2.72	2.15
ORX33	Little River	Riverine	54	80	3.49	1.68
ORX34	Little River	Riverine	54	100	0.14	0.09
ORX35	Little River	Riverine	54	80	0.49	0.24
ORX36	Little River	Riverine	54	70	2.62	1.10
ORX37	Little River	Riverine	54	70	1.28	0.54
ORX38	Little River	Riverine	54	70	0.88	0.37
ORX39	Little River	Upland	63	60	2.54	0.91
ORX40	Little River	Upland	63	80	3.07	1.48
ORX40a	Little River	Upland	63	70	2.61	1.10
ORX40b	Little River	Upland	63	70	1.24	0.52
ORX40c	Little River	Upland	63	70	4.53	1.90
ORX41	Little River	Riverine	29	70	3.34	1.40
ORX42	Little River	Riverine	29	70	3.20	1.34
ORX43	Little River	Riverine	29	80	6.56	3.15
ORX44	Little River	Riverine	30	70	12.66	5.32
ORX45	Little River	Riverine	10	50	8.54	2.56
ORX45a	Back Creek	Upland	7	90	1.37	0.74
ORX46	Little River	Riverine	10	50	1.26	0.38
ORX46a	Back Creek	Upland	7	90	0.96	0.52
ORX47	Little River	Riverine	10	80	1.93	0.92
ORX47a	Back Creek	Upland	7	90	0.31	0.17
ORX48	Little River	Riverine	10	60	2.08	0.75
ORX48a	Back Creek	Upland	7	90	1.09	0.59
ORX49	Back Creek	Upland	7	60	1.57	0.56
ORX50	Back Creek	Upland	7	80	1.13	0.54
ORX51	Back Creek	Upland	7	70	0.54	0.23
ORX52	Back Creek	Upland	7	90	0.72	0.39
ORX53	Back Creek	Upland	7	90	0.35	0.19
ORX54	Back Creek	Upland	7	90	1.50	0.81

(continued)

Table A.1. Field locations and conditions *(continued)*.

Field No.	Drainage	Stratum	Sample Unit	Visibility (%)	Field size (ha)	Corrected area (ha)
ORX54a	Back Creek	Upland	7	60	1.13	0.41
ORX55	Back Creek	Upland	7	90	0.58	0.31
ORX56	Back Creek	Upland	7	90	0.35	0.19
ORX57	Back Creek	Upland	7	90	0.57	0.31
ORX58	Back Creek	Upland	7	90	0.90	0.49
ORX59	Back Creek	Riverine	7	100	2.05	1.23
ORX60	Back Creek	Riverine	7	60	3.62	1.30
ORX61	Back Creek	Riverine	7	100	4.89	2.93
ORX62	Back Creek	Riverine	7	100	1.53	0.92
ORX63	Back Creek	Riverine	15	100	1.71	1.03
ORX64	Back Creek	Riverine	15	100	0.47	0.28
ORX65	Back Creek	Upland	14	100	0.94	0.57
ORX66	Back Creek	Upland	14	100	0.40	0.24
ORX67	Back Creek	Upland	14	100	0.27	0.16
ORX68	Back Creek	Upland	14	100	0.08	0.05
ORX69	Back Creek	Upland	14	100	1.04	0.63
ORX70	Back Creek	Upland	14	60	0.99	0.36
ORX71	Back Creek	Upland	14	70	0.26	0.11
ORX72	Back Creek	Upland	14	100	0.22	0.13
ORX73	Back Creek	Upland	14	100	0.25	0.15
ORX74	Back Creek	Upland	14	100	0.24	0.14
ORX75	Back Creek	Upland	14	100	1.89	1.14
ORX76	Back Creek	Riverine	14	100	0.12	0.07
ORX77	Back Creek	Riverine	14	90	1.63	0.88
ORX78	Back Creek	Riverine	14	90	1.12	0.60
ORX79	Back Creek	Upland	13	80	1.34	0.64
ORX80	Back Creek	Upland	13	80	0.49	0.23
ORX81	Back Creek	Upland	13	80	0.80	0.38
ORX82	Back Creek	Upland	13	80	1.16	0.56
ORX83	Back Creek	Riverine	10	90	0.21	0.11
ORX84	Back Creek	Riverine	10	90	0.34	0.18
ORX85	Back Creek	Riverine	10	90	0.79	0.43
ORX86	Back Creek	Riverine	10	90	1.62	0.88
ORX87	Back Creek	Upland	12	90	0.28	0.15
ORX88	Back Creek	Upland	12	70	0.56	0.23
ORX89	Back Creek	Upland	12	70	0.74	0.31
ORX90	Back Creek	Upland	26	70	2.39	1.00
ORX91	Back Creek	Upland	26	50	13.18	3.95
ORX92	Back Creek	Upland	25	50	19.18	5.75

Appendix B

ARTIFACT TOTALS

Artifact counts are tabulated in this appendix. Table B.1 lists the counts by site (using both the Office of State Archaeology and Research Laboratories of Anthropology site numbers) for the artifact classes identified in Chapter 5. Table B.2 provides a summary of artifact totals by site numbers and field numbers. Artifact totals by fields were used in the spatial analyses described in Chapter 6. Detailed information regarding site and field location can be found in the site file data maintained by both the Office of State Archaeology, Raleigh, and the Research Laboratories of Anthropology, University of North Carolina at Chapel Hill.

OSA No.	RLA No.	Artifact Type	Count
31OR307	OR259	point frag.	1
31OR307	OR259	biface thinning flakes	2
31OR307	OR259	other thinning flake	17
31OR308	OR260	shatter	2
31OR308	OR260	other thinning flake	9
31OR309	OR261	other thinning flake	1
31OR310	OR262	biface thinning flakes	3
31OR311	OR263	Small Triangular pt	1
31OR311	OR263	biface	1
31OR311	OR263	other thinning flake	4
31OR312	OR265	biface	6
31OR312	OR265	core	1
31OR312	OR265	point frag.	4
31OR312	OR265	biface thinning flakes	51
31OR312	OR265	other thinning flake	32
31OR313	OR266	Haw River cord marked	2
31OR313	OR266	biface thinning flakes	14
31OR313	OR266	shatter	2
31OR313	OR266	other thinning flake	5
31OR314	OR267	Guilford pt	1
31OR315	OR279	biface thinning flakes	2
31OR316	OR280	biface thinning flakes	2
31OR316	OR280	other thinning flake	1
31OR317	OR281	Guilford pt	1
31OR317	OR281	biface thinning flakes	6
31OR317	OR281	other thinning flake	11
31OR318	OR282	Small Triangular pt	1
31OR318	OR282	biface thinning flakes	9
31OR318	OR282	other thinning flake	1
31OR319	OR283	biface	1
31OR319	OR283	biface thinning flakes	8
31OR319	OR283	scraper (SSIV)	1
31OR319	OR283	other thinning flake	10
31OR320	OR284	Randolph St pt	1
31OR320	OR284	core	1
31OR320	OR284	biface thinning flakes	15
31OR320	OR284	scraper	1
31OR320	OR284	other thinning flake	7
31OR321	OR285	biface thinning flakes	11
31OR322	OR286	core (poly-like)	1
31OR323	OR287	Gypsy pt	1
31OR323	OR287	biface	1
31OR323	OR287	biface thinning flakes	4
31OR324	OR288	biface thinning flakes	3
31OR324	OR288	scraper (SSIV)	1
31OR326	OR289	ginger beer bottle	1
31OR327	OR290	biface thinning flakes	1
31OR328	OR291	Sav. River pt	1
31OR328	OR291	biface thinning flakes	2
31OR328	OR291	other thinning flake	2
31OR329	OR292	Guilford pt	1
31OR329	OR292	Randolph St pt	1
31OR329	OR292	point frag.	1
31OR329	OR292	point tip	1
31OR329	OR292	biface thinning flakes	12

(continued)

Appendix B.1. Artifact counts by site *(continued)*.

OSA No.	RLA No.	Artifact Type	Count
31OR329	OR292	scraper	1
31OR329	OR292	other thinning flake	4
31OR330	OR293	Guilford pt	4
31OR330	OR293	Kirk C-N pt	1
31OR330	OR293	Morrow Mt pt	2
31OR330	OR293	Randolph St pt	1
31OR330	OR293	Small Sav. River pt	1
31OR330	OR293	Indet. sand tempered	1
31OR330	OR293	UID Side-Notched pt	1
31OR330	OR293	biface	3
31OR330	OR293	core	2
31OR330	OR293	point tip	1
31OR330	OR293	drill?	2
31OR330	OR293	biface thinning flakes	43
31OR330	OR293	other thinning flake	9
31OR331	OR294	Guilford pt	1
31OR331	OR294	Morrow Mt pt	1
31OR331	OR294	biface thinning flakes	8
31OR331	OR294	scraper	1
31OR331	OR294	other thinning flake	1
31OR332	OR295	Small Sav. River pt	1
31OR332	OR295	biface thinning flakes	3
31OR332	OR295	other thinning flake	5
31OR333	OR296	Badin pt	1
31OR333	OR296	Randolph St pt	1
31OR333	OR296	core (flake blank)	1
31OR333	OR296	point tip	1
31OR333	OR296	biface thinning flakes	35
31OR333	OR296	shatter	4
31OR333	OR296	other thinning flake	21
31OR334	OR303	Indet. sand tempered	1
31OR334	OR303	biface thinning flakes	1
31OR334	OR303	other thinning flake	1
31OR335	OR304	annular pearlware	1
31OR336	OR305	container glass	1
31OR336	OR305	window glass	1
31OR337	OR306	biface thinning flakes	2
31OR338	OR319	other thinning flake	1
31OR339	OR320	biface (preform?)	1
31OR339	OR320	biface thinning flakes	5
31OR339	OR320	scraper	1
31OR339	OR320	other thinning flake	7
31OR340	OR324	Small Sav. River pt	1
31OR340	OR324	point tip	1
31OR340	OR324	biface thinning flakes	1
31OR341	OR268	Guilford pt	1
31OR341	OR268	container glass	3
31OR341	OR268	biface thinning flakes	4
31OR341	OR268	scraper frag.	1
31OR341	OR268	stoneware	3
31OR341	OR268	other thinning flake	2
31OR341	OR268	whiteware	4
31OR341	OR268	window glass	1
31OR342	OR269	Gypsy pt	1
31OR342	OR269	biface thinning flakes	5

(continued)

OSA No.	RLA No.	Artifact Type	Count
31OR342	OR269	whiteware	1
31OR343	OR270	point frag.	1
31OR343	OR270	biface thinning flakes	26
31OR344	OR271	point frag.	1
31OR344	OR271	biface thinning flakes	7
31OR344	OR271	scraper frag.	1
31OR345	OR272	Badin pt	1
31OR345	OR272	Guilford pt	1
31OR345	OR272	Gypsy pt	1
31OR345	OR272	Morrow Mt pt	1
31OR345	OR272	biface	9
31OR345	OR272	core (poly-like)	1
31OR345	OR272	point frag.	6
31OR345	OR272	biface thinning flakes	33
31OR345	OR272	preform?	4
31OR345	OR272	scraper	2
31OR345	OR272	other thinning flake	23
31OR345	OR272	whiteware	2
31OR346	OR273	biface	3
31OR346	OR273	container glass	2
31OR346	OR273	biface thinning flakes	4
31OR346	OR273	glass insulator	1
31OR346	OR273	other thinning flake	4
31OR346	OR273	whiteware	4
31OR347	OR274	biface thinning flakes	1
31OR348	OR275	whiteware	2
31OR349	OR276	biface thinning flakes	3
31OR349	OR276	preform	1
31OR349	OR276	other thinning flake	1
31OR350	OR277	other thinning flake	2
31OR351	OR278	biface	1
31OR352	OR297	biface thinning flakes	4
31OR352	OR297	other thinning flake	3
31OR353	OR298	Gypsy pt	1
31OR353	OR298	Indet. sand tempered	1
31OR353	OR298	biface thinning flakes	2
31OR353	OR298	other thinning flake	2
31OR354	OR299	Sav. River pt	1
31OR354	OR299	Small Triangular pt	6
31OR354	OR299	Indet. sand tempered	49
31OR354	OR299	biface	2
31OR354	OR299	chopper	1
31OR354	OR299	Haw River cord marked	2
31OR354	OR299	core	6
31OR354	OR299	core (poly-like)	1
31OR354	OR299	cs hoe frag.	1
31OR354	OR299	point frag.	2
31OR354	OR299	point tip	1
31OR354	OR299	biface thinning flakes	248
31OR354	OR299	hammerstone	1
31OR354	OR299	Haw River net impressed	24
31OR354	OR299	scraper (ESII)	1
31OR354	OR299	shatter	16
31OR354	OR299	Hillsboro simple stamped	12
31OR354	OR299	small check stamped	2
31OR354	OR299	other thinning flake	247
31OR354	OR299	human (?) bone fragment	1

(continued)

OSA No.	RLA No.	Artifact Type	Count
31OR355	OR300	other thinning flake	1
31OR356	OR301	other thinning flake	1
31OR357	OR302	other thinning flake	1
31OR358	OR307	biface thinning flakes	4
31OR358	OR307	shatter	1
31OR358	OR307	other thinning flake	8
31OR359	OR308	container glass	11
31OR359	OR308	stoneware	1
31OR359	OR308	white ironstone	1
31OR359	OR308	whiteware	5
31OR359	OR308	window glass	3
31OR360	OR309	Guilford pt	1
31OR360	OR309	biface thinning flakes	3
31OR360	OR309	scraper	1
31OR360	OR309	other thinning flake	4
31OR361	OR310	biface thinning flakes	1
31OR361	OR310	other thinning flake	3
31OR362	OR311	Gypsy pt	1
31OR362	OR311	Morrow Mt pt	1
31OR362	OR311	Swannanoa pt	1
31OR362	OR311	biface	2
31OR362	OR311	point frag.	2
31OR362	OR311	biface thinning flakes	22
31OR362	OR311	graver?	1
31OR362	OR311	scraper (ESI)	1
31OR362	OR311	shatter	1
31OR362	OR311	other thinning flake	40
31OR363	OR312	biface	1
31OR363	OR312	biface thinning flakes	3
31OR363	OR312	other thinning flake	3
31OR364	OR313	Small Triangular pt	1
31OR364	OR313	Yakin Eared pt	1
31OR364	OR313	biface	1
31OR364	OR313	container glass	2
31OR364	OR313	biface thinning flakes	67
31OR364	OR313	porcelain	1
31OR364	OR313	shatter	2
31OR364	OR313	other thinning flake	51
31OR364	OR313	whiteware	10
31OR365	OR314	container glass	4
31OR365	OR314	point frag.	1
31OR365	OR314	biface thinning flakes	2
31OR365	OR314	stoneware	2
31OR365	OR314	other thinning flake	4
31OR365	OR314	whiteware	15
31OR366	OR315	Guilford pt	1
31OR366	OR315	other thinning flake	2
31OR367	OR316	chopper	1
31OR367	OR316	hammerstone-core	1
31OR368	OR317	other thinning flake	1
31OR369	OR318	biface	1
31OR369	OR318	biface thinning flakes	5
31OR369	OR318	other thinning flake	2
31OR370	OR343	Guilford pt	1
31OR370	OR343	Small Triangular pt	1
31OR370	OR343	biface	1
31OR370	OR343	point frag.	2

(continued)

Appendix B.1. Artifact counts by site *(continued)*.

OSA No.	RLA No.	Artifact Type	Count
31OR370	OR343	point tip	4
31OR370	OR343	biface thinning flakes	20
31OR370	OR343	scraper (ESI)	2
31OR370	OR343	shatter	1
31OR370	OR343	other thinning flake	20
31OR371	OR344	point tip	3
31OR371	OR344	biface thinning flakes	8
31OR371	OR344	other thinning flake	5
31OR372	OR345	container glass	9
31OR372	OR345	stoneware	1
31OR372	OR345	other thinning flake	2
31OR372	OR345	white ironstone	1
31OR372	OR345	whiteware	5
31OR373	OR346	biface	1
31OR373	OR346	scraper	1
31OR373	OR346	other thinning flake	1
31OR374	OR347	Palmer C-N pt	1
31OR374	OR347	point tip	1
31OR374	OR347	other thinning flake	1
31OR375	OR348	Guilford pt	1
31OR375	OR348	point frag.	1
31OR375	OR348	biface thinning flakes	2
31OR375	OR348	other thinning flake	5
31OR376	OR349	Small Sav. River pt	1
31OR376	OR349	biface	1
31OR376	OR349	biface thinning flakes	8
31OR376	OR349	other thinning flake	4
31OR377	OR350	point frag.	1
31OR377	OR350	biface thinning flakes	3
31OR377	OR350	other thinning flake	5
31OR378	OR351	biface thinning flakes	2
31OR378	OR351	other thinning flake	2
31OR379	OR352	biface thinning flakes	1
31OR379	OR352	other thinning flake	1
31OR380	OR353	Guilford pt	1
31OR380	OR353	Small Sav. River pt	1
31OR380	OR353	point tip	1
31OR380	OR353	biface thinning flakes	4
31OR380	OR353	scraper (ESI)	1
31OR380	OR353	other thinning flake	1
31OR381	OR354	Guilford pt	1
31OR381	OR354	Morrow Mt pt	1
31OR381	OR354	Small Sav. River pt	3
31OR381	OR354	UID Small Stem pt	1
31OR381	OR354	biface	1
31OR381	OR354	point frag.	2
31OR381	OR354	biface thinning flakes	20
31OR381	OR354	scraper	2
31OR381	OR354	scraper (ESII)	1
31OR381	OR354	shatter	1
31OR381	OR354	other thinning flake	20
31OR382	OR355	biface thinning flakes	1
31OR382	OR355	other thinning flake	2
31OR383	OR356	biface	1
31OR383	OR356	biface thinning flakes	23
31OR383	OR356	scraper	1
31OR383	OR356	shatter	2

(continued)

Appendix B.1. Artifact counts by site *(continued)*.

OSA No.	RLA No.	Artifact Type	Count
31OR383	OR356	other thinning flake	22
31OR384	OR357	Small Triangular pt	1
31OR384	OR357	core	1
31OR384	OR357	point frag.	1
31OR384	OR357	point tip	1
31OR384	OR357	biface thinning flakes	8
31OR384	OR357	other thinning flake	11
31OR385	OR358	biface thinning flakes	11
31OR385	OR358	other thinning flake	9
31OR386	OR359	Small Sav. River pt	1
31OR386	OR359	biface thinning flakes	9
31OR386	OR359	other thinning flake	8
31OR387	OR360	Small Sav. River pt	1
31OR387	OR360	biface thinning flakes	5
31OR387	OR360	other thinning flake	1
31OR388	OR361	Badin pt	1
31OR388	OR361	biface thinning flakes	4
31OR388	OR361	other thinning flake	5
31OR389	OR362	biface thinning flakes	2
31OR389	OR362	preform	1
31OR390	OR363	container glass	2
31OR390	OR363	metal hook	1
31OR390	OR363	pendant?	1
31OR390	OR363	spice bottle	1
31OR390	OR363	stoneware	2
31OR390	OR363	whiteware	9
31OR390	OR363	window glass	1
31OR390	OR363	yellow ware	1
31OR391	OR364	Small Triangular pt	1
31OR391	OR364	biface	1
31OR391	OR364	point tip	1
31OR391	OR364	biface thinning flakes	14
31OR391	OR364	other thinning flake	2
31OR392	OR365	Small Triangular pt	1
31OR392	OR365	biface thinning flakes	8
31OR392	OR365	other thinning flake	3
31OR393	OR366	point frag.	1
31OR393	OR366	other thinning flake	2
31OR394	OR367	Badin pt	1
31OR394	OR367	Small Triangular pt	4
31OR394	OR367	UID Corner-Notched pt	1
31OR394	OR367	Yadkin pt	1
31OR394	OR367	biface	2
31OR394	OR367	point frag.	1
31OR394	OR367	point tip	1
31OR394	OR367	biface thinning flakes	35
31OR394	OR367	pieces esquillees	1
31OR394	OR367	porcelain	1
31OR394	OR367	preform	1
31OR394	OR367	scraper (ESI)	1
31OR394	OR367	other thinning flake	21
31OR395	OR368	point tip	1
31OR395	OR368	biface thinning flakes	4
31OR395	OR368	stoneware	4
31OR395	OR368	other thinning flake	2

(continued)

Appendix B.1. Artifact counts by site *(continued)*.

OSA No.	RLA No.	Artifact Type	Count
31OR395	OR368	whiteware	9
31OR396	OR369	Guilford pt	1
31OR396	OR369	biface thinning flakes	2
31OR396	OR369	other thinning flake	1
31OR397	OR370	biface thinning flakes	2
31OR398	OR371	Stanly pt	1
31OR398	OR371	core	1
31OR398	OR371	point tip	1
31OR398	OR371	biface thinning flakes	11
31OR398	OR371	scraper frag.	1
31OR398	OR371	shatter	3
31OR398	OR371	other thinning flake	18
31OR399	OR337	Basal-Notched pt	1
31OR399	OR337	Gypsy pt	2
31OR399	OR337	Randolph St pt	1
31OR399	OR337	Small Triangular pt	2
31OR399	OR337	biface	1
31OR399	OR337	core (poly-like)	2
31OR399	OR337	point frag.	2
31OR399	OR337	point tip	3
31OR399	OR337	biface thinning flakes	15
31OR399	OR337	pieces esquillees	1
31OR399	OR337	preform	1
31OR399	OR337	scraper	1
31OR399	OR337	scraper (ESII)	1
31OR399	OR337	scraper (PS)	1
31OR399	OR337	shatter	2
31OR399	OR337	other thinning flake	10
31OR400	OR338	biface thinning flakes	6
31OR400	OR338	other thinning flake	2
31OR401	OR339	Small Triangular pt	2
31OR401	OR339	biface	4
31OR401	OR339	core	1
31OR401	OR339	biface thinning flakes	18
31OR401	OR339	shatter	1
31OR401	OR339	other thinning flake	8
31OR402	OR340	biface thinning flakes	3
31OR402	OR340	other thinning flake	7
31OR403	OR341	preform	1
31OR404	OR342	Kirk Stem pt	1
31OR404	OR342	biface	1
31OR404	OR342	biface thinning flakes	5
31OR404	OR342	other thinning flake	3
31OR405	OR321	UID Side-Notched pt	1
31OR405	OR321	container glass	12
31OR405	OR321	point tip	1
31OR405	OR321	biface thinning flakes	32
31OR405	OR321	insulator frag?	1
31OR405	OR321	preform	1
31OR405	OR321	other thinning flake	6
31OR405	OR321	whiteware	5
31OR405	OR321	window glass	4
31OR406	OR322	Gypsy pt	1
31OR406	OR322	container glass	7
31OR406	OR322	creamware	1
31OR406	OR322	biface thinning flakes	1
31OR406	OR322	white ironstone	1

(continued)

OSA No.	RLA No.	Artifact Type	Count
31OR406	OR322	whiteware	2
31OR407	OR323	Morrow Mt pt	1
31OR407	OR323	Small Sav. River pt	1
31OR407	OR323	biface	1
31OR407	OR323	container glass	36
31OR407	OR323	creamware	1
31OR407	OR323	point tip	1
31OR407	OR323	biface thinning flakes	1
31OR407	OR323	insulator	2
31OR407	OR323	marble	1
31OR407	OR323	stoneware	1
31OR407	OR323	other thinning flake	3
31OR407	OR323	toy tire	1
31OR407	OR323	white ironstone	3
31OR407	OR323	whiteware	9
31OR407	OR323	window glass	3
31OR408	OR325	Kirk C-N pt	1
31OR408	OR325	UID Small Stem pt	1
31OR408	OR325	other thinning flake	1
31OR409	OR326	container glass	1
31OR409	OR326	point tip	1
31OR410	OR327	coarse earthenware	1
31OR410	OR327	container glass	1
31OR410	OR327	pearlware	3
31OR410	OR327	preform	1
31OR410	OR327	other thinning flake	3
31OR410	OR327	whiteware	2
31OR411	OR328	container glass	7
31OR412	OR329	Guilford axe	1
31OR412	OR329	biface thinning flakes	7
31OR413	OR330	point frag.	2
31OR413	OR330	point tip	1
31OR413	OR330	biface thinning flakes	12
31OR413	OR330	scraper (ESI)	1
31OR413	OR330	other thinning flake	8
31OR414	OR331	Hardaway Side-Notched pt	1
31OR414	OR331	container glass	19
31OR414	OR331	biface thinning flakes	8
31OR414	OR331	stoneware	1
31OR414	OR331	whiteware	6
31OR414	OR331	window glass	7
31OR415	OR332	brick	2
31OR415	OR332	container glass	9
31OR415	OR332	stoneware	1
31OR415	OR332	other thinning flake	1
31OR415	OR332	whiteware	2
31OR416	OR333	animal bone	3
31OR416	OR333	ashtray	1
31OR416	OR333	ceramic figurine	2
31OR416	OR333	comb	1
31OR416	OR333	container glass	20
31OR416	OR333	dish frag.?	1
31OR416	OR333	biface thinning flakes	2
31OR416	OR333	glass handle	1
31OR416	OR333	marble	1
31OR416	OR333	misc. plastic	6
31OR416	OR333	nails	2

(continued)

OSA No.	RLA No.	Artifact Type	Count
31OR416	OR333	phono record frag.	1
31OR416	OR333	porcelain	2
31OR416	OR333	porcelain doll frag.	1
31OR416	OR333	porcelain saucer	1
31OR416	OR333	razor handle	1
31OR416	OR333	spice bottle?	1
31OR416	OR333	stoneware	2
31OR416	OR333	white ironstone	1
31OR416	OR333	whiteware	16
31OR416	OR333	window glass	3
31OR416	OR333	yellow ware	1
31OR417	OR334	brick	1
31OR417	OR334	container glass	10
31OR417	OR334	white ironstone	3
31OR417	OR334	whiteware	2
31OR418	OR335	Guilford pt	1
31OR418	OR335	biface	1
31OR418	OR335	point frag.	2
31OR418	OR335	point tip	1
31OR418	OR335	biface thinning flakes	8
31OR418	OR335	other thinning flake	6
31OR419	OR336	Morrow Mt pt	1
31OR419	OR336	point tip	1
31OR419	OR336	biface thinning flakes	4
31OR420	OR372	biface thinning flakes	1
31OR421	OR373	Indet. sand tempered	1
31OR421	OR373	biface thinning flakes	2
31OR421	OR373	other thinning flake	3
31OR422	OR374	biface thinning flakes	3
31OR423	OR375	coarse earthenware	1
31OR423	OR375	container glass	3
31OR423	OR375	lusterware	1
31OR423	OR375	pearlware	2
31OR423	OR375	porcelain	1
31OR423	OR375	whiteware	11
31OR424	OR376	Small Triangular pt	1
31OR424	OR376	Indet. sand tempered	1
31OR424	OR376	biface thinning flakes	7
31OR424	OR376	hammerstone-anvil	1
31OR425	OR377	UID Side-Notched pt	1
31OR425	OR377	biface thinning flakes	1
31OR426	OR378	Indet. sand tempered	1
31OR426	OR378	drill frag?	1
31OR426	OR378	biface thinning flakes	4
31OR426	OR378	other thinning flake	10
31OR427	OR379	Kirk C-N pt	1
31OR427	OR379	biface thinning flakes	1
31OR427	OR379	other thinning flake	1
31OR428	OR388	core	1
31OR428	OR388	biface thinning flakes	2
31OR428	OR388	other thinning flake	1
31OR431	OR397	container glass	1
31OR431	OR397	panel bottle (broken)	3
31OR431	OR397	whiteware	2
31OR434	OR393	glass candlestick holder	1
31OR434	OR393	milk bottle	1
31OR434	OR393	panel bottle	2

(continued)

Table B.1. Artifact counts by site *(continued)*.

OSA No.	RLA No.	Artifact Type	Count
31OR434	OR393	pepsi bottle (broken)	1
31OR434	OR393	porcellaneous ware	2
31OR434	OR393	stoneware	5
31OR441	OR380	other thinning flake	2
31OR442	OR381	biface	1
31OR442	OR381	biface thinning flakes	7
31OR442	OR381	hammerstone	1
31OR442	OR381	other thinning flake	1
31OR443	OR382	preform	1
31OR444	OR383	biface thinning flakes	2
31OR444	OR383	scraper	1
31OR444	OR383	other thinning flake	1
31OR445	OR384	other thinning flake	3
31OR446	OR385	Gypsy pt	1
31OR446	OR385	Randolph St pt	3
31OR446	OR385	point frag.	1
31OR446	OR385	point tip	3
31OR446	OR385	biface thinning flakes	91
31OR446	OR385	preform	1
31OR446	OR385	scraper	1
31OR446	OR385	shatter	8
31OR446	OR385	other thinning flake	118
31OR447	OR386	Kirk C-N pt	1
31OR447	OR386	core (poly-like)	1
31OR447	OR386	biface thinning flakes	1
31OR447	OR386	other thinning flake	1
31OR448	OR387	biface thinning flakes	1
31OR448	OR387	other thinning flake	2
31OR452	OR399	brick	1
31OR456	OR406	stoneware	3

Appendix B.2. Summary of artifact totals.

OSA No.	RLA No.	Field No.	Artifact totals
31OR307	OR259	ORX06	20
31OR308	OR260	ORX07	11
31OR309	OR261	ORX08	1
31OR310	OR262	ORX09	3
none	none	ORX10	0
31OR311	OR263	ORX11	6
31OR312	OR265	ORX12-13	94
none	none	ORX14	0
none	none	ORX15	0
none	none	ORX16	0
none	none	ORX17	0
31OR313	OR266	ORX18	23
31OR314	OR267	ORX18	1
31OR341	OR268	ORX19	8
31OR342	OR269	ORX19	6
31OR343	OR270	ORX19	27
31OR344	OR271	ORX19	9
31OR345	OR272	ORX19	82
31OR346	OR273	ORX19	11
31OR347	OR274	ORX19	1
31OR349	OR276	ORX19	5
31OR350	OR277	ORX19	2
31OR351	OR278	ORX20	1
31OR315	OR279	ORX21	2
none	none	ORX22	0
31OR316	OR280	ORX23	3
31OR317	OR281	ORX24	18
31OR318	OR282	ORX24	11
31OR319	OR283	ORX24	20
31OR320	OR284	ORX24	25
31OR321	OR285	ORX24	11
31OR322	OR286	ORX24	1
31OR323	OR287	ORX25	6
31OR324	OR288	ORX25	4
31OR327	OR290	ORX26	1
31OR328	OR291	ORX27	5
31OR329	OR292	ORX27	21
31OR330	OR293	ORX28	71
31OR331	OR294	ORX28	12
31OR332	OR295	ORX29	9
31OR333	OR296	ORX29	64
31OR352	OR297	ORX30	7
31OR353	OR298	ORX30	6
31OR354	OR299	ORX31	623
31OR355	OR300	ORX33	1
31OR356	OR301	ORX33	1
None	none	ORX34	0
None	none	ORX35	0
None	none	ORX36	0

(continued)

Appendix B.2. Summary of artifact totals *(continued)*.

OSA No.	RLA No.	Field No.	Artifact totals
none	none	ORX37	0
31OR357	OR302	ORX38	1
none	none	ORX39	0
31OR334	OR303	ORX40	3
31OR337	OR306	ORX40c	2
31OR358	OR307	ORX41	13
31OR360	OR309	ORX41	9
31OR361	OR310	ORX42	4
31OR362	OR311	ORX43	72
31OR363	OR312	ORX43	7
31OR364	OR313	ORX43	123
31OR365	OR314	ORX43	7
31OR366	OR315	ORX44	3
31OR367	OR316	ORX44	2
31OR368	OR317	ORX44	1
31OR369	OR318	ORX44	8
31OR338	OR319	ORX45	1
31OR339	OR320	ORX45	14
31OR405	OR321	ORX45a	41
none	none	ORX46	0
31OR406	OR322	ORX46a	2
none	none	ORX47	0
31OR407	OR323	ORX47a	8
31OR340	OR324	ORX48	3
none	none	ORX48A	0
31OR408	OR325	ORX49	3
31OR409	OR326	ORX50	1
none	none	ORX51	0
31OR410	OR327	ORX52	4
31OR412	OR329	ORX54	8
31OR413	OR330	ORX54	24
none	none	ORX54A	0
31OR414	OR331	ORX55	9
31OR415	OR332	ORX56	1
31OR416	OR333	ORX57	2
31OR418	OR335	ORX58	19
31OR419	OR336	ORX58	6
31OR399	OR337	ORX59	46
31OR400	OR338	ORX60	8
31OR401	OR339	ORX61	34
31OR402	OR340	ORX62	10
31OR403	OR341	ORX63	1
31OR404	OR342	ORX64	10
31OR370	OR343	ORX65	52
31OR371	OR344	ORX66	16
31OR372	OR345	ORX67	2
none	none	ORX68	0
31OR373	OR346	ORX69	3
31OR374	OR347	ORX70	3

(continued)

Appendix B.2. Summary of artifact totals *(continued)*.

OSA No.	RLA No.	Field No.	Artifact totals
31OR375	OR348	ORX71	9
31OR376	OR349	ORX71	14
31OR377	OR350	ORX72	9
31OR378	OR351	ORX73	4
31OR379	OR352	ORX74	2
31OR380	OR353	ORX75	9
31OR381	OR354	ORX75	53
31OR382	OR355	ORX76	3
31OR383	OR356	ORX77	49
31OR384	OR357	ORX78	23
31OR385	OR358	ORX78	20
31OR386	OR359	ORX79	18
31OR387	OR360	ORX80	7
31OR388	OR361	ORX81	10
31OR389	OR362	ORX82	3
31OR391	OR364	ORX83	19
31OR392	OR365	ORX84	12
31OR393	OR366	ORX85	3
31OR394	OR367	ORX86	70
31OR395	OR368	ORX87	7
31OR396	OR369	ORX87	4
31OR397	OR370	ORX88	2
31OR398	OR371	ORX89	36
none	none	ORX90	0
31OR420	OR372	ORX91	1
31OR421	OR373	ORX91	6
31OR422	OR374	ORX91	3
31OR424	OR376	ORX92	10
31OR425	OR377	ORX92	2
31OR426	OR378	ORX92	16
31OR427	OR379	ORX92	3
31OR441	OR380	ORX92	2