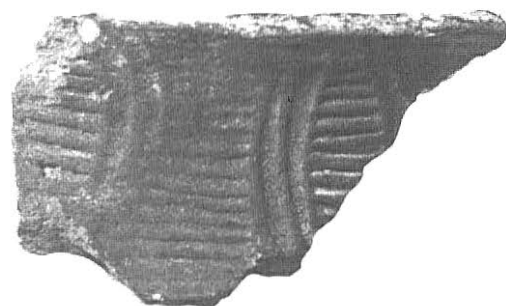
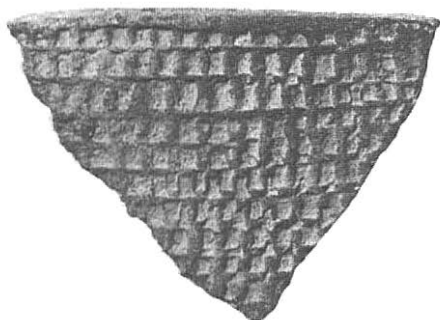


**AN ARCHAEOLOGICAL CONTEXT FOR THE  
SOUTH CAROLINA WOODLAND PERIOD**



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SOUTH CAROLINA WOODLAND PERIOD

RESEARCH SERIES 22

Prepared for:  
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September 1990

ISSN 0882-2042

Library of Congress Cataloging-in-Publication Data

Trinkley, Michael.

An archaeological context for the South Carolina woodland period / Michael Trinkley ; prepared for South Carolina Department of Archives and History.

p. cm. -- (Research series, ISSN 0882-2042 ; 22)

"September 1990."

Includes bibliographical references.

\$6.00

1. Woodland culture--South Carolina. 2. Indians of North America--South Carolina--Antiquities. I. South Carolina. Dept. of Archives and History. II. Title. III. Series: Research series (Chicora Foundation) ; 22.

E99.W84T75 1990

975.7'01--dc20

90-44534

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Making plans is often the occupation of an opulent and boastful mind, which thus obtains the reputation of a creative genius by demanding what it cannot itself supply, by censuring what it cannot improve, and by proposing what it knows not where to find.

-- Immanuel Kant, 1783

## ABSTRACT

The Woodland period is traditionally defined by the introduction of fired pottery, the gradual introduction and use of agricultural crops, increasing social complexity, and the eventual occurrence of a burial mound complex. Along the South Carolina coast the Woodland Period occurs as early as 2000 B.C., while in the Piedmont this cultural tradition begins about 1000 B.C. It is gradually replaced in most areas of South Carolina by the South Appalachian Mississippian Period around A.D. 1100.

This study provides a context for Woodland Period research in South Carolina. It provides a description of the context's cultural theme, geographic area, chronological limits; preliminary suggestions are offered for evaluation criteria for Woodland Period sites; areas requiring additional research are discussed; and specific actions for identification, evaluation, registration, documentation, and treatment are discussed.

An appendix to the study briefly describes the various projectile points and pottery types associated with the Woodland Period in South Carolina.

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## ACKNOWLEDGEMENTS

This project has been financed in part with federal funds from the National Park Service, Department of Interior, and administered by the South Carolina Department of Archives and History. I appreciate their support of this research; however, the contents and opinions do not necessarily reflect the views or policies of the Department of the Interior or the South Carolina Department of Archives and History.

I especially wish to thank Dr. Patricia Cridlebaugh and Ms. Nancy Pittenger for their support and continued encouragement. Review comments have been provided by Dr. Linda Stine, Ms. Nancy Pittenger, and Ms. Susan McGahee of the Department of Archives and History.

Both valuable and valued assistance was provided by Mr. Keith Derting, Mr. Charles Rinehart, and Dr. Jon Leader of the South Carolina Institute of Archaeology and Archaeology. Assistance in research was provided by Ms. Debi Hacker and Ms. Natalie Adams.

Finally, I wish to thank those who offered their time to conduct peer review of the document, Dr. David G. Anderson, Mr. Ken Sassaman, Mr. Steve Smith, Dr. H. Trawick Ward, and Dr. Jack Wilson, Jr.



## INTRODUCTION

### Background and Goals

This study is the result of a South Carolina Department of Archives and History Survey and Planning Grant. South Carolina is rich in archaeological resources, but this archaeological heritage is a fragile and non-renewable resource. Although over 12,000 sites have been identified, and thousands more are certain to exist, these resources are finite and easily destroyed. Every day, archaeological sites are threatened and destroyed by natural erosion, agriculture, development, and vandalism. Even archaeological research destroys archaeological sites -- either through excavation or through the decision that the site is not worthy of more intensive investigation. If archaeological sites are thoughtlessly destroyed, then a part of our past, which belongs to each one of us, is lost forever.

A great deal of information has been gathered on South Carolina's archaeological sites over the past 25 years and our knowledge of how South Carolina's first inhabitants lived is much more complete today than it was only a few years ago. Yet, most of this information has been accumulated in the absence of a comprehensive cultural resource management plan or explicit archaeological research design encompassing the entire state. Decisions concerning the identification, evaluation, and protection of cultural resources have been made typically using only implicit assumptions about the distribution and importance of the various resources.

Perhaps the best example of this are the numerous Woodland Period shell middens along the coastal zone of South Carolina which are described on site forms in words such as "too small to provide important information," or "similar to other, numerous middens and therefore unworthy of additional attention." Similar descriptions abound for Coastal Plain and Piedmont sites where sites are described simply as "thoroughly plow disturbed." Decisions regarding our non-renewable cultural resources should be based on an appreciation of their broad cultural contexts.

Such an approach is even more important today than ever before, with the increasing number of developments in South Carolina's resort communities. Sites which 10 or 15 years ago seemed plentiful are being destroyed at an ever increasing rate. While there has always been an effort to protect or study the uncommon or unusual sites, there has been relatively little attention to the "ordinary" or "typical" sites.

For the purposes of this study, the Woodland has been defined as the major cultural tradition or period following the Archaic and characterized by the introduction of fired clay pottery. This definition is not, however, accepted by all researchers, for a variety of reasons. One reviewer has cogently remarked that during the first millennium after the introduction of ceramics it is likely that a number of groups did not make or use pottery, and consequently are not considered part of the Woodland culture. While these groups can be included in the Late Archaic, this approach makes it difficult to study the interactions which may have occurred during this early, or formative, phase of pottery manufacture. In addition, the reviewer offers an interesting observation that some of the apparently "early ceramic" peoples may also be responsible for (perhaps seasonal) sites lacking ceramics. While the definition of Woodland based on pottery technology has been retained, these are appropriate cautions to all investigators.

Toward the end of the Woodland Period burial mounds were introduced and it is possible that incipient agriculture was present. The Woodland Period in South Carolina began as early as about 2000 B.C. along the coast, to perhaps 1000 B.C. in the Piedmont. It was gradually replaced by South Appalachian Mississippian cultures about A.D. 1100 (Figure 1).

This study has selected four physiographic provinces of South Carolina, the coastal zone, the coastal plain, the piedmont, and the blue ridge, as the basic study units. This approach is essentially identical to that proposed by Crook for Georgia, who noted, "the theoretical basis for definition of study units is the currently accepted scientific paradigm of adaption within the environment" (Crook 1986:7). Clearly the environment of South Carolina has had an effect on the cultural adaptation of the various prehistoric groups in South Carolina, although this must be recognized as distinct from any implication of "environmental determinism." One reviewer understandably laments that this context is limited to South Carolina, since prehistory should be written from a regional vantage point, rather than from the provincial stance of state boundaries. Certainly, viewing archaeology using state boundaries is a "dangerous" undertaking. The failure to realize the typological similarity between Refuge and Thom's Creek, for example, has largely been caused by research stopping at the boundary between South Carolina and Georgia. While this context must be specific to South Carolina, it is appropriate to stress this need for regional perspectives.

The Coastal Zone consists of the present barrier and sea islands, and the adjacent mainland with maritime forests. This zone extends inland several miles in some areas and may be divided into two subsections, with the coastal geology and physiography north of the Santee River clearly distinct from the area to the south (see Brown 1975; Smith 1933).

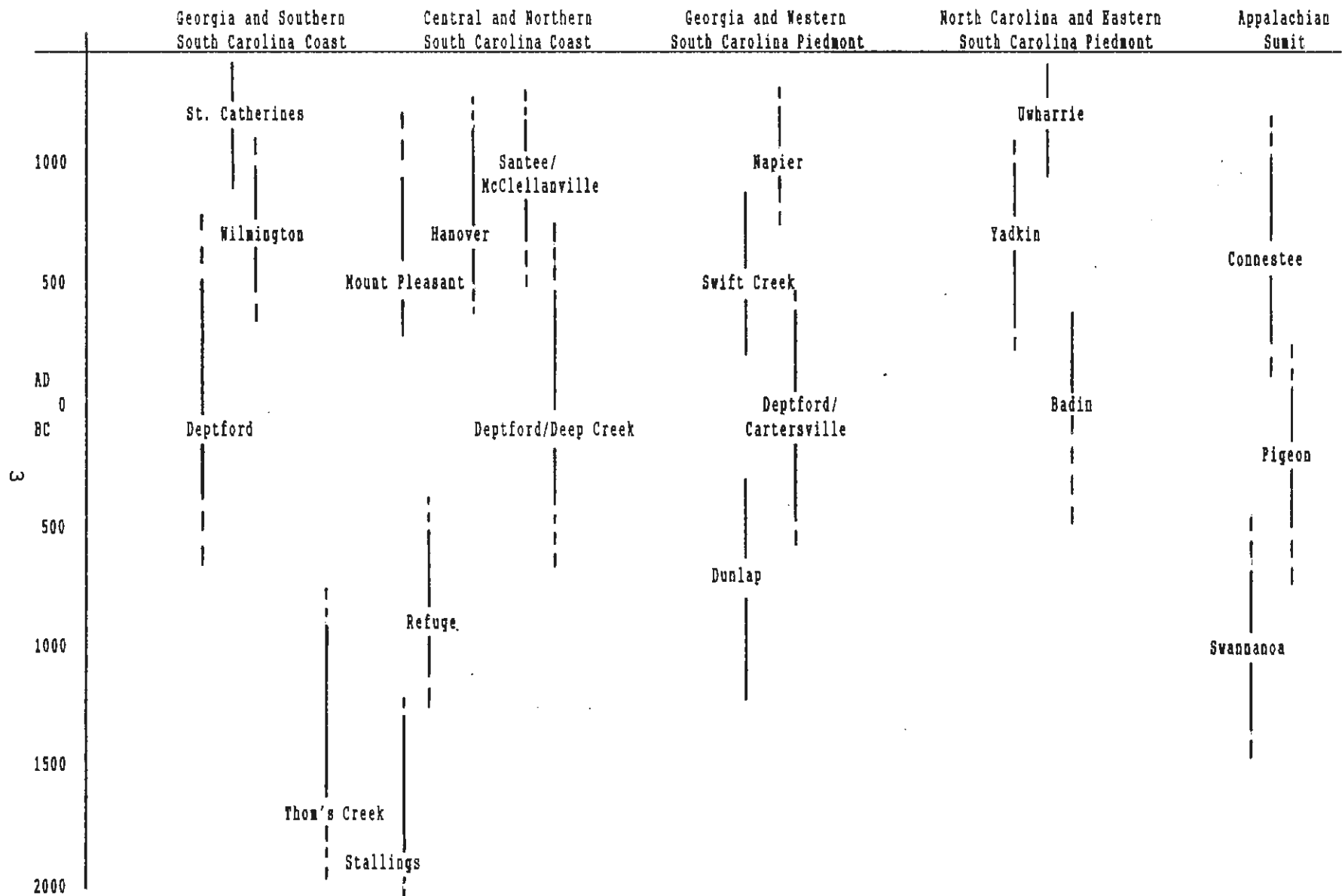


Figure 1. Woodland Period Phases in the South Carolina locality.

The Coastal Plain lies to the west of the Coastal Zone and extends to the Fall Line. This area is dominated by sandy soils, low relief, and the slow rivers which flow into the Atlantic Ocean. Subdivisions of this area include the Atlantic Coast Flatwoods; the Southern Coastal Plain, and the Carolina Sandhills. The Atlantic Coast Flatwoods consist of moderately well to poorly drained sandy loam soils on broad flats and depressions. In the Southern Coastal Plain broad areas of well-drained sandy soils are found on nearly level to rolling topography. In the Carolina Sand Hills excessively drained sands are found on slopes and ridges, while moderately well drained sands are found at the base of the slopes.

The Piedmont extends from the Fall Line northwesterly to the Blue Ridge along a belt about 100 miles in width. The area has been thoroughly dissected by streams which have a dendritic drainage pattern. Interstream divides are broad and gently sloping with steeper slopes along the streams as they approach the Fall Line. Further inland, toward the Blue Ridge Province, the streams have cut deep valleys and long steep slopes are present. Ridges between the streams tend to be narrow and steep. Soils tend to be moderately deep, well drained sandy loams with clay loam or clay subsoil. Erosion has been severe in this region and there are extensive areas of eroded soils with sandy clay surface layers.

The Blue Ridge is confined to the extreme northwest corner of the state. Elevations range from 1400 to 3400 feet mean sea level. Topography is generally steep to very steep with narrow, rounded ridgetops. Soils in this area tend to be shallow and cultivation is severely limited by both the slopes and the shallow soils.

This document is intended to provide the first step in developing a comprehensive planning process for South Carolina's Woodland Period sites. Hopefully, the words "first step" and "developing" will not be lost upon those who review and use this study. There is no intention to offer this document as a conclusive synthesis or a final chapter in our understanding of the past. In fact, a careful review of this study should reveal how little we actually know about our archaeological heritage and how much additional research is essential.

Further tempering any enthusiasm or criticism of this document should be the realization that any planning tool must be dynamic in nature. As questions are answered through the accumulation of new data, as questions are refined, and as new questions are posed, it is essential that this document be revised and its scope extended. As new information is gathered and pre-existing data better understood or published, many of the statements made in this study will appear not only dated, but even simplistic and naive.

#### Methodology

As originally envisioned, this study was to combine

information from two sources: published site reports and similar studies, and the South Carolina site files, maintained by the South Carolina Institute of Archaeology and Anthropology. Published studies were to be gleaned from the State Historic Preservation Office files, the South Carolina Institute of Archaeology and Anthropology, and Chicora Foundation. Site file information was to be obtained from five representative counties -- one from the Coastal Zone (Beaufort), one from the Coastal Plain (Marlboro), one from the Fall Line (Richland), one from the Piedmont (Greenwood), and one from the Blue Ridge (Pickens).

Problems were immediately encountered at a number of levels. Very few compliance archaeological studies are filed in the Search Room of the South Carolina Department of Archives and History. The collection of sources at the South Carolina Institute of Archaeology was found to be widely variable, representing perhaps less than half of the reports available on South Carolina archaeology. The Chicora Foundation collections were able to fill some gaps in the literature search, but they also represent only a small portion of the published data available.

The South Carolina site files presented equally perplexing problems. During the bulk of this study, the South Carolina Institute of Archaeology and Anthropology was in the process of a major upgrade of the files. This did not prevent their use, but it suggested that the existing data might be of very limited value. Discussions with Mr. Keith Derting and Dr. Jon Leader also suggested that the site file information was so variable that it may be unsuitable for this type of study. While the South Carolina Institute of Archaeology and Anthropology is making major improvements in the site files, site specific information such as soil type, distance from water, site size, and recovered artifacts, is exceedingly variable, both in accuracy and content (see Rinehart 1990).

Only four counties had been placed into computerized records, severely limiting the usefulness of the computer data. In addition, the current computerized site forms are not suitable for multiple searches -- it is not possible to search, for example, for Woodland sites which are also listed as potentially eligible for inclusion on the National Register, or for Woodland sites with a particular type of pottery.

As a consequence, the available published sources were consulted and appropriate publications are included in this study, although they clearly represent a minority of the studies conducted on Woodland sites in South Carolina. In addition, after reviewing the available studies, many of the cultural resource surveys, while adequate for site identification and assessment purposes, offer only minimal interpretive value and were eliminated from the study.

Some basic information on the number of Woodland Period sites

was obtained from the computerized files for Allendale, Kershaw, Dorchester, and Cherokee counties. This provides a review of information available for two Coastal Plain counties (Allendale and Dorchester), one Fall Line county (Kershaw), and one Piedmont county (Cherokee). We were unable to obtain similar information in a cost-effective manner from either a Coastal Zone or Blue Ridge county.

## OVERVIEW OF THE WOODLAND PERIOD

### Early Woodland

The earliest phase of the Woodland Period is called Stallings, after the type site excavated by the Cosgroves in 1929 (Claflin 1931). These "Stallings Island people" produced a rich cultural assemblage of bone and antler work, polished stone items, grooved and perforated "net sinkers" or steatite disks, stone tools (including projectile points, knives, scrapers, and cruciform drills), and fiber tempered pottery (see also Williams 1968). It was over a decade before the typological significance of the Stallings ware was recognized and a formal type description was offered (Fairbanks 1942; Griffin 1943). The definitive feature of this pottery is its large quantity of fiber, now identified as Spanish Moss (Simpkins and Scoville 1981), included in the paste prior to firing. Vessel forms include simple, shallow bowls and large, wide mouthed bowls, as well as deeper jar forms. The pottery is generally molded, although coiling fractures are occasionally present, particularly later in the period. Firing was poorly controlled, and the pottery was incompletely oxidized. The pottery was decorated with punctations (using periwinkle shells, reeds, and sticks), finger pinching, and incising. At least some of these motifs may be temporally sensitive (Trinkley 1986).

Stallings phase sites are found clustered in the Savannah River drainage (Claflin 1931; Hanson 1982; Sassaman 1989) and in the Coastal Zone south of Charleston (Anderson 1975). Recent studies have also identified the pottery at least as far north as the Tar drainage in North Carolina (Phelps 1983:27-28), which suggests either the culture's remarkable adaptive capability or the widespread initial acceptance of pottery manufacture. Stoltman (1966, 1974) obtained an early radiocarbon date of 2515±95 B.C. (GXO-345) from Rabbit Mount in the Savannah drainage. This area has produced a number of large Stallings sites, such as Stallings Island (Bullen and Greene 1970; Claflin 1931), Fennel Hill (38AL2 notes on file, South Carolina Institute of Archaeology and Anthropology), Rabbit Mount (Stoltman 1974), and Bilbo (Williams 1968:152-197; Dye 1976), with elaborate material assemblages. As a result, the Savannah drainage is generally accepted as the birthplace of the Stallings culture. The stimulus for this elaboration on the preexisting Late Archaic culture may be related to a complex process of population increase and disequilibrium with the environment (see Hanson 1982:21 and Smith 1974:306-311). Such a situation is similar to Binford's (1968) hypothesis regarding population stress as a factor in new forms of food procurement. Hanson (1982:13) notes that by 2500 B.C. mussel availability had increased through changes in sea level, river gradient, and channel

location. More recent research (Brooks et al. 1986), however, questions this reconstruction and has found that mussel availability in the Savannah River drainage may have begun to decrease by 2500 B.C.

The elaborate Savannah River drainage sites such as Stallings Island, Fennel Hill, Rabbit Mount, and Bilbo, are all characterized by large quantities of either fresh water mussels or tidal oysters, large quantities of artifacts, and abundant features. Stoltman (1974:51-56) further suggests the possibility of a structure at Rabbit Mount. These middens, however, represent only one aspect of the Stallings settlement system. Another portion of that system is represented by Stallings sites which evidence little shell. While many of these are sparse scatters, such as Clear Mount (Stoltman 1974) and Pinckney Island (Trinkley 1981b), some evidence intensive occupation with features and a rich cultural assemblage, such as the Love (38AL10; Trinkley 1974) and Fish Haul (38BU805; Trinkley 1986) sites. At the Fish Haul site a Stallings phase "D"-shaped structure containing about 90 square feet of floor area has been identified (Trinkley 1986:145-147) and Stoltman (1974:51-54) recovered a lean-to structure at Rabbit Mount. The function of essentially non-shell midden sites such as Love and Fish Haul is only partially understood at present, although shellfish seasonality and ethnobotanical studies (Claassen 1986; Lawrence 1986; Trinkley 1986) are beginning to suggest late fall and winter occupation. These may represent early sites when the subsistence base was diffuse, prior to intensive riverine and estuarine exploitation. Alternatively, and more likely, they may represent a seasonal round in the Stallings settlement system. Riverine shellfish may have been gathered in the fall when the Savannah River and its tributaries were low and clear, while other resources away from the river were exploited during the period of high discharge in the late winter and spring (Anderson and Schuldenrein 1985:13). Additional work within the Savannah drainage is necessary to understand more fully the relationship between large shell middens, dense non-shell upland and coastal sites, and sparse upland and coastal "scatters."

Stallings pottery was produced as late as 1060±80 B.C. (UGA-1686), based on a date from the Cunningham Mound C in Liberty County, Georgia; although Milanich and Fairbanks (1980:78) suggest that fiber tempering may be found on the Georgia coast as late as A.D. 1. While Stallings pottery is usually considered older than, and often the progenitor of, Thom's Creek pottery, recent radiocarbon dates leave little doubt that the two pottery styles are largely contemporaneous (Trinkley 1980b). Hanson (1982:14), however, notes that where both Stallings and Thom's Creek sherds are found stratigraphically separated on the same site, the Stallings ware is the earlier of the two. Such a situation may indicate that "the agent of tempering changed earlier on the coast than in the riverine setting" (Hanson 1982:14).



The following Thom's Creek phase dates as early as 2220±350 B.C. (UGA-584) from Spanish Mount in Charleston County (Sutherland 1974) and continues to at least 935±175 B.C. (UGA-2901), based on a date from the Lighthouse Point Shell Ring, also in Charleston County (Trinkley 1980a:191-192). The Thom's Creek phase is characterized by an artifact assemblage almost identical to that of Stallings sites. The only major differences include the replacement of fiber tempering with sand, or a clay not requiring tempering, and the gradual reduction of projectile point size.

Thom's Creek pottery, first typed by Griffin (1945), consists of sandy paste pottery decorated with the motifs common to the Stallings series, including punctations (reed and shell), finger pinching, simple stamping, incising, and very late in the phase, finger smoothed (Trinkley 1980b). Investigations at the Lighthouse Point and Stratton Place shell rings, stratigraphic studies at Spanish Mount and Fig Island, radiocarbon dates from Lighthouse Point and Venning Creek, and the study of surface collections from a number of sites, have suggested a temporal ordering of the Thom's Creek series. Reed punctated pottery appears to be the oldest, followed by the shell punctated and finger pinched motifs. Late in the Thom's Creek phase, perhaps by 1000 B.C., there is the addition of Thom's Creek Finger Smoothed (Trinkley 1983:44). Vessel forms include deep, straight sided jars and shallow conoidal bowls. Lip treatments are simple, and coiling fractures are common. Firing of the Thom's Creek vessels is certainly better than that evidenced for Stallings, but there continues to be abundant incompletely oxidized specimens.

The projectile points, which are typically Savannah River Stemmed (Coe 1964) during the Late Archaic Period and early Stallings phase, are reduced in size during the Thom's Creek phase and are appropriately classified as Small Savannah River Stemmed (Oliver 1981; see also Trinkley 1980a:Plate 14). Raw materials used in their production include coastal plain chert, quartz, quartzite, orthoquartzite, and rhyolitic stones. Anderson and Joseph (1988:195-199), however, question Oliver's (1981) thesis that the large Savannah River point was fairly rapidly replaced by smaller points. They note that there appears to be a "long co-occurrence of both large and small forms" (Anderson and Joseph 1988:197), while also correctly noting that Coe's (1964) original typology has been rather inconsistently used by researchers. As an alternative to Oliver's (1981) approach, they suggest that other factors affecting point size, especially trends in raw material use, be more intensively investigated and factored into typological studies (see White 1982; Sassaman et al. 1989). One reviewer suggests that the major problem with current Woodland lithic typologies is that they fail to recognize the shift from bifacial core reduction techniques to an amorphous core reduction technology (which may be intimately related to the adaptation of a sedentary lifestyle). In addition, work in the Savannah River area is providing evidence of what some call "cultural quarrying" or the scavenging and recycling of

earlier materials in the Woodland Period as source materials became more scarce (Sassaman et al. 1898:297-299).

Bone pins illustrated by Williams (1968:152-197) and Trinkley (1980a:Plate 17) may have functioned as weaving or netting tools (shuttles or needles). Common to Thom's Creek sites are whelk shells with a carefully executed and well-smoothed hole in the shoulder of the body whorl close to the aperture and a heavily worn or smoothed columella and outer whorl. These tools likely served as scrapers (see Trinkley 1980a:209-214). Other whelk tools evidence a heavily battered columella which has resulted in a blunt tip.

Like the Stallings settlement pattern, Thom's Creek sites are found in a variety of environmental zones and take on several forms. Thom's Creek sites are found throughout the South Carolina Coastal Zone, Coastal Plain, and up to the Fall Line. The sites are found into the North Carolina Coastal Plain, but do not appear to extend southward into Georgia. There appears to be strong concentration of Thom's Creek sites in the Santee River drainage and the central South Carolina coast (see Anderson 1975:184).

In the Coastal Plain drainage of the Savannah River there is a change of settlement, and probably subsistence, away from the riverine focus found in the Stallings Phase (Hanson 1982:13; Stoltman 1974:235-236). Thom's Creek sites are more commonly found in the upland areas and lack evidence of intensive shellfish collection. In the Coastal Zone large, irregular shell middens, small, sparse shell middens; and large "shell rings" are found in the Thom's Creek settlement system.

Limited testing has been conducted at one small Thom's Creek non-shell midden on Sol Legare Island (38CH779) in Charleston County, South Carolina (Trinkley 1984). The site evidenced very limited reliance on shellfish and faunal remains, with the bulk of the food remains consisting of large mammals. Excavations also identified a portion of a probable Thom's Creek post structure situated about 180 feet inland from the marsh edge.

Excavations at other Coastal Zone Thom's Creek sites includes the work by Sutherland (1973, 1974) at the Spanish Mount shell midden (38CH62). While this work has never been completely published, the site appears to represent a seasonally occupied camp with a diffuse subsistence base, including reliance on shellfish, floral material, fish, and mammals. Work by Michie (1979) at the Bass Pond Dam site (38CH124) in Charleston County, suggests a similar subsistence orientation.

By far the most work has been conducted at Thom's Creek phase shell rings (see Trinkley 1980a, 1985). These sites are circular middens about 130 to 300 feet in diameter, 2 to 6 feet in height, and 40 feet in width at their bases, with clear interiors. These doughnut-shaped accumulations were formed as small mounds, arranged

around an open ground area, and gradually blended together. The ring itself is composed of varying proportions of shell, animal bone, pottery, soil, and other artifacts. The midden soils are silts, and the shell is lensed and crushed. Post holes are abundant, although no structures have been clearly defined. Pits are evidence throughout the midden, but under the midden, large shellfish steaming pits, several feet in diameter and 2 to 3 feet in depth, are more clearly evident. Their use and the subsequent disposal of the shells actually formed the middens.

These shell rings were apparently mundane occupation sites for fairly large social units which lived on the ring, disposed of garbage underfoot, and used the clear interiors as areas for communal activities. The sites further suggest relatively permanent, stable village life as early as 1600 B.C., with a subsistence base oriented toward large and small mammals, fish, shellfish, and hickory nut resources (Trinkley 1985).

Recently, Lawrence has accumulated previously published information on South Carolina shell rings (Lawrence 1989). A number of the sites are in the process of being nominated to the National Register of Historic Places as part of a multiple property nomination.

Following Stallings and Thom's Creek are the Refuge and Deptford phases, both strongly associated with the Georgia sequence and the Savannah drainage (DePratter 1979; Lepionka et al. 1983; Williams 1968). The Refuge Phase, dated from 1070±115 B.C. (QC-784) to 510±100 B.C. (QC-785), is found primarily along the South Carolina coast from the Savannah drainage as far north as the Santee River (Williams 1968:208). Anderson (1975:184) further notes an apparent concentration of Refuge sites in the Coastal Plain, particularly along the Santee River. The pottery is found inland along the Savannah River (Peterson 1971:151-168), although it does not extend above the Fall Line (see Anderson and Schuldenrein 1985:719; Garrow 1975:18-21).

The Refuge series pottery is similar in many ways to the preceding Thom's Creek wares. The paste is compact and sandy or gritty, while surface treatments include sloppy simple stamped, dentate stamped, and random punctate decorations (see DePratter 1979:115-123; Williams 1968:198-208). Anderson et al. note that these typologies are "marred by a lack of reference to the Thom's Creek series" (Anderson et al. 1982:265) and that the Refuge Punctate and Incised types are indistinguishable from Thom's Creek wares. Peterson (1971:153) characterizes Refuge as both a degeneration of the preceding Thom's Creek series and also as a bridge to the succeeding Deptford series. There is a small stemmed biface associated with the Savannah drainage Refuge sites. This type has been termed Groton Stemmed by Stoltman (1974:114-115) and Deptford Stemmed by Trinkley (1980c:20-23). Peterson suggests that, "a change from the 'Savannah River' to the small stemmed points, a

diminution basically, could occur during the Refuge" (Peterson 1971:159), although points similar to the Small Savannah River Stemmed continue to occur.

While large Refuge shell middens, such as 38JA61 (Lepionka et al. 1983), occur, a significant change in the Refuge settlement pattern and subsistence base is clearly evidenced. At the end of the Thom's Creek phase a number of small, non-shell midden sites are found. This pattern of small sites, situated away from potential shellfish sources, continues in the Refuge phase (see, for example, Peterson 1971:164-168). Refuge pottery is common on coastal sites south of the Santee River, but is usually found in sandy buried soils with few features or organic remains (see, for example, Trinkley 1982 and the distribution discussions by Anderson et al. 1982:266).

It is difficult to reconstruct the subsistence base, although the sites suggest small, seasonal camps for small groups (Trinkley 1982). The settlement fragmentation, which began at the end of the Thom's Creek phase, around 1000 B.C., probably relates to the increase in sea level, from a Thom's Creek phase low of 10 feet below the current high marsh surface at 1200 B.C. to a high of about 3 feet below the current high marsh surface at 950 B.C. (Colquhoun et al. 1980; Brooks et al. 1989). This increasing sea level drowned the tidal marshes (and sites) on which the Thom's Creek people relied. The following Refuge phase evidences the fragmentation necessary when the environment which gave rise to large sedentary populations disappeared. Hanson (1982:21-23), based on Savannah River data, suggests that subsistence stress present during the Thom's Creek phase may have resulted in an expansion of the settlement system into diverse environmental settings. It seems likely, however, that the development of mature, upland tributaries was also essential ingredient in this process (see Sassaman et al. 1989). This same "splintering" is observed on the South Carolina coast.

Peterson, based on his study of the Savannah River Groton Plantation sites, suggests that "the best antecedent for Deptford anywhere in the southeast is the Refuge Phase of the Savannah Delta and the Groton localities" (Peterson 1971:328). Milanich (1971) has investigated the coastal Deptford culture and suggested that while the Deptford phase is part of a "coastal tradition," its origin was influenced by increased cultural contact with other groups, such as members of the Tchefuncte, Adena-Hopewell, and Savannah River traditions.

The Deptford culture takes its name from the type site located east of Savannah, Georgia, which was excavated in the mid-1930s (Caldwell 1943:12-16). Deptford phase sites are best recognized by the presence of fine to course sandy paste pottery with a check stamped surface treatment. This pottery is typically in the form of a cylindrical vessel with a conoidal base. The flat bottomed bowl

with tetrapodal supports found at Deptford sites along the Florida Gulf coast (Milanich and Fairbanks 1980:79) is very rare in South Carolina. Other Deptford phase pottery styles include cord marking, simple stamping, a complicated stamping which resembles early Swift Creek, and a geometric stamping which consists of a series of carved triangles or diamonds with interior dots (see Anderson et al. 1982:277-293; DePratter 1979).

The Deptford technology is little better known than that of the preceding Refuge phase. Shell tools are uncommon, bone tools are "extremely rare" (Milanich and Fairbanks 1980:77), and stone tools are rare on Coastal Zone sites. All of this indicates to some researchers that "wood must have been worked into a variety of tool types" (Milanich and Fairbanks 1980:75). One type of stone tool associated with South Carolina Deptford sites is a very small, stemmed projectile point tentatively described as "Deptford Stemmed" (Trinkley 1980c:20-23). This point is the culmination of the Savannah River Stemmed reduction seen in the Thom's Creek and Refuge phases. Similar points have been found at a variety of Deptford sites (see Milanich 1971:175-176; Stoltman 1974:115-116, Figure 20i-j, 40h-j). Also found at Deptford sites are "medium-sized triangular points," probably similar to the Yadkin Triangular point (Coe 1964:45, 47, 49; Milanich and Fairbanks 1980:75-76). In the Savannah River area Sassaman et al. (1989:156-157) report that Deptford pottery appears much more strongly associated with triangular projectile points (Badin and Yadkin types) than with the small stemmed points. They note, "small stemmed bifaces are attributed to the Early Woodland period with the recognition that they probably persisted into the subsequent period but were rapidly and thoroughly replaced by triangular forms by 2000 B.P." (Sassaman et al. 1989:157).

Perhaps of even greater interest is the co-occurrence of the larger triangular points (such as Badin and Yadkin) with smaller triangular forms (such as Caraway) traditionally attributed to the Late Woodland and South Appalachian Mississippian periods. This situation has been reported at Coastal Plain sites (Blanton et al. 1986:107), Savannah River sites (Sassaman et al. 1989:157), and Coastal Zone sites (Trinkley 1990). Blanton et al. (1986) suggest that these point types were used at the same time, but perhaps for different tasks.

Milanich (1971:Figure 12) illustrates a generalized distribution of this series, which is divided into the Gulf and Atlantic subregions. This distribution, however, should extend to the South Carolina Fall Line and probably as far north as the Neuse River in North Carolina. Anderson (1975:186) has found Deptford wares distributed throughout the South Carolina Coastal Plain, with major sites at the mouths of the Santee and Savannah Rivers. The earliest date for Deptford, 1045±110 B.C. (UGA-3515), has been obtained from 38LX5 in Lexington County (Trinkley 1980c:11). The most recent date comes from St. Simons Island, Georgia, where a

date of A.D. 935±70 (UM-673) was obtained. Milanich and Fairbanks (1980:60) suggest a tighter range of about 500 B.C. to A.D. 600, while Anderson et al. (1982:281) suggest a date range of about 800 B.C. to A.D. 500.

Deptford sites on the South Carolina coast are usually small, especially when compared to the earlier Thom's Creek middens, and they are usually multicomponent. Deptford Coastal Zone sites, while containing shell, do not represent massive mounds, but rather thin middens formed as series of small shell heaps which have been deposited adjacent to the marsh and gradually formed continuous masses. These heaps were the result of short periods of site use, perhaps as a base camp for shellfish collecting (see Milanich and Fairbanks 1980:72-73; Trinkley 1981b). Results of soil chemical analyses from the Pinckney Island midden (Trinkley 1981b:53-54) suggest less than intensive occupation. The chemical studies support Milanich's assessment that occupation was not on the shell piles, but adjacent to them (Milanich and Fairbanks 1980:72-73; Trinkley 1981b:53-54).

Milanich (1971:192-198; see also Milanich and Fairbanks 1980:70-73) suggests that the Deptford phase settlement pattern involves both coastal (i.e., Coastal Zone) and inland (i.e., Coastal Plain) sites. The coastal sites, which are always situated adjacent to tidal creek marshes, evidence a diffuse subsistence system. The inland sites are also small, lack shell, and are situated on the edge of swamp terraces. This situation is similar to that found in South Carolina, although there are Deptford middens which exhibit a very focal subsistence emphasis (Trinkley 1990). Sites such as Pinckney Island (38BU67 and 38BU168; Trinkley 1981b) and Minim Island (38GE46; Drucker and Jackson 1984; Espenshade and Brockington 1989) evidence large Coastal Zone Deptford occupations, while sites such as 38BU747 (Trinkley 1990) evidence only small, focal shell midden occupations. Sites such as 38BK984 (Roberts and Caballero 1988) provide evidence of Coastal Plain non-shell midden Deptford occupation.

At Pinckney Island the bulk of the calories came from shellfish while mammals played a relatively insignificant role (Trinkley 1981b:57-60). A similar situation occurs at Minim Island (38GE46), where late spring and summer occupation is documented with a reliance on fishing, with mammals being a secondary, if not minor food source. In the fall there is evidence of intensive oyster gathering and possible use of nearby hickory masts (Drucker and Jackson 1984; Espenshade and Brockington 1989).

Inland, sites such as 38AK228-W, 38LX5, 38RD60, and 38BM40 indicate the presence of an extensive Deptford occupation on the Fall Line and the Coastal Plain, although sandy, acidic soils preclude statements on the subsistence base (Anderson 1979; Ryan 1972; Trinkley 1978, 1980c). These interior or upland Deptford sites, however, are strongly associated with the swamp terrace

edge, and this environment is productive not only in nut masts, but also in large mammals such as deer. Perhaps the best data concerning Deptford "base camps" comes from the Lewis-West site (38AK228-W), where evidence of abundant food remains, storage pit features, elaborate material culture, mortuary behavior, and craft specialization has been reported (Sassaman et al. 1989:96-98).

Milanich observes that "this dual distribution . . . suggests a transhumant subsistence pattern," with inland sites occupied in the fall for the collection of floral resources and the hunting of deer (Milanich 1971:194; Milanich and Fairbanks 1980:72). While such a subsistence round may have been practiced, it cannot be documented from the available evidence. Some sites, such as Pinckney Island, were clearly occupied in the late winter (Trinkley 1981b:60). Minim Island, however, was apparently occupied in the summer (Drucker and Jackson 1984), although a fall or winter occupation cannot be precluded. 38BU747 was likewise occupied during the spring and summer (Trinkley 1990).

A similar situation is observed along the Savannah drainage, where Stoltman (1974:237) observed both floodplain and upland Deptford sites. This duality, according to Stoltman, is "indicative of a gradually increasing dependence upon upland wild plant food" and eventually horticulture (Stoltman 1974:237), although no archaeological evidence supports this speculation. Hanson (1982:21-23) sees settlement locations becoming more diverse as population pressures require that new food sources be identified and exploited. While this is similar to the explanation offered by Stoltman, Hanson does not imply or suggest that the alternate food source must be horticultural.

This view of an estuarine Deptford adaptation with minor interior occupations must be re-evaluated based on the Savannah River drainage work of Brooks and Hanson (1987) and Sassaman et al. (1989:293-295) who suggest larger residential base camps and foraging zones along the Savannah River, coupled with smaller, household residences and foraging zones in the uplands along small tributaries. While it is not yet clear if these upland sites represent a perennial settlement pattern or a seasonal fissioning typical of the Late Archaic, it seems likely that the pattern was equally affected by demographic pressures and external socio-political influences (see Sassaman et al. 1989:303-304). Of considerable potential significance is evidence of trade between coastal and interior Deptford groups. For example, the Lewis-West site (38AK228-W) has produced evidence of sharks' teeth and whelk shells from the coastal region.

Throughout much of the Coastal Zone and Coastal Plain north of Charleston, a somewhat different cultural manifestation is observed, related to the "Northern Tradition" (e.g., Caldwell 1958). This recently identified assemblage has been termed Deep Creek and was first identified from northern North Carolina sites

(Phelps 1983). The Deep Creek assemblage is characterized by pottery with medium to coarse sand inclusions and surface treatments of cord marking, fabric impressing, simple stamping, and net impressing. Much of this material has been previously designated as the Middle Woodland "Cape Fear" pottery originally typed by South (1960). The Deep Creek wares date from about 1000 B.C. to A.D. 1 in North Carolina, but may date later in South Carolina, based on two radiocarbon dates of 120±130 B.C. (QC-1358) and A.D. 210±110 (QC-1357). The Deep Creek settlement and subsistence systems are poorly known, but appear to be very similar to those identified with the Deptford phase.

The Deep Creek assemblage strongly resembles Deptford both typologically and temporally. It appears this northern tradition of cord and fabric impressions was introduced and gradually accepted by indigenous South Carolina populations. During this time some groups continued making only the older carved paddle-stamped pottery, while others mixed the two styles, and still others (and later all) made exclusively cord and fabric stamped wares.

Information on Piedmont and Blue Ridge Early Woodland Period sites is rather meager (see Goodyear 1979:116). In Georgia, the Early Woodland is recognized, through the work of Caldwell (1958), as a period of transition away from the Archaic Period lifeways, with considerable influence provided by the "Northern Tradition," most clearly observed in the spread of fabric impressed wares.

In Georgia, the Early Woodland is characterized by the Kellog focus (Caldwell 1958), which consists of Dunlap Fabric Marked pottery, small circular houses, medium-sized isosceles triangular projectile points similar to those defined by Coe (1964:45, 49) as Yadkin Triangular, and flexed burials. Garrow (1975:20) suggests a date range of about 1000 to 300 B.C. for the Kellog focus. The Cartersville focus is also suggested as an Early Woodland continuation of the Kellog focus, which extends into the Middle Woodland (Garrow 1975:20). Anderson and Schuldenrein (1985:719-720) offer a similar assessment and suggest Cartersville may be found as late as A.D. 1000.

The presence of Dunlap and Cartersville ceramics in South Carolina has not been well documented, although Anderson and Joseph (1988:222) note that Cartersville components occur at 61 sites. Gresham (1986) reports on limited excavations at 38AB387 in Abbeville County, South Carolina where fabric impressed pottery identified as Dunlap was recovered. The site suggested a limited, summer encampment on the ridge, while fall and winter occupations were in the floodplain. Anderson and Joseph (1988:230-231) suggest a relatively high population density coupled with residential mobility or seasonal movement. A possible house floor is reported from the Rocky River site (38AB91) (Anderson and Schuldenrein (1985:224, 227).



A few of the more northwestern counties in South Carolina evidence pottery which may be a local variation of the Swannanoa series (Rodeffer et al. 1979:50), and these sites usually cluster along the riverine zone, adjacent to major drainages. In general, however, most of the interriverine zone of the South Carolina Piedmont appears to be devoid of Early Woodland settlement. The few sites found in the riverine zones have contributed little toward a better understanding of Early Woodland lifeways or the cultural diversity present at the sites.

### Middle Woodland

Although the Deptford phase is discussed as part of the Early Woodland, many authors place the phase intermediate between the Early and Middle Woodland (see, for example, Anderson et al. 1982:28, 250). Such an approach is not unreasonable, because Deptford exhibits considerable temporal range and cultural adaptations which are more characteristically Middle Woodland (see also Anderson 1985:53). The Deptford phase, however, is still part of the early carved paddle stamped tradition which is replaced by the posited northern intrusion of wrapped paddle stamping during the Middle Woodland. Clearly the Deep Creek pottery, at the same time period as Deptford, is part of this "Northern Tradition," yet the Deep Creek, on temporal grounds, is considered Early Woodland by Phelps (1983:17, 29). This is meant simply to indicate that the transition from Early to Middle Woodland is not as clear as one might wish.

The Middle Woodland in South Carolina is characterized by a pattern of settlement mobility and short-term occupation. On the southern coast it is associated with the Wilmington phase, while on the northern coast it is recognized by the presence of Hanover, McClellanville or Santee, and Mount Pleasant assemblages. Wilmington and Hanover may be viewed as regional varieties of the same ceramic tradition. The pottery is characterized almost solely by its crushed sherd temper which makes up 30 to 40% of the paste and which ranges in size from 3 to 10 mm. Wilmington was first described by Caldwell and Waring (Williams 1968:113-116) from coastal Georgia work, while the Hanover description was offered by South (1960), based on a survey of the Southeastern coast of North Carolina (with incursions into South Carolina). The Wilmington phase was seen by Waring (Williams 1968:221) as intrusive from the Carolina coast, but there is considerable evidence for the inclusion of Deptford traits in the Wilmington series. For example, Caldwell and McCann (1940:n.p.) noted that, "the Wilmington complex proper contains all of the main kinds of decoration which occur in the Deptford complex with the probable exception of Deptford Linear Checkstamped" (see also Anderson et al. 1982:275). Consequently, surface treatments of cord marking, check stamping, simple stamping, and fabric impressing may be found with sherd tempered paste.

Sherd tempered Wilmington and Hanover wares are found from at least the Chowan River in North Carolina southward onto the Georgia coast. Anderson (1975:187) has found the Hanover series evenly distributed over the Coastal Plain of South Carolina, although it appears slightly more abundant north of the Edisto River. The heartland may be along the inner Coastal Plain north of the Cape Fear River in North Carolina. Radiocarbon dates for Wilmington and Hanover range from 135±85 B.C. (UM-1916) from site 38BK134 to A.D. 1120±100 (GX-2284) from a "Wilmington House" at the Charles Towne Landing site, 38CH1. Most dates, however, cluster from A.D. 400 to 900; some researchers prefer a date range of about 200 B.C. to A.D. 500 (Anderson et al. 1982:276).

Largely contemporaneous with the sherd tempered wares are the Mount Pleasant, McClellanville, and Santee series. The Mount Pleasant series has been developed by Phelps from work along the northeastern North Carolina coast (Phelps 1983:32-35, 1984:41-44) and is a Middle Woodland refinement of South's (1960) previous Cape Fear series. The pottery is characterized by a sandy paste either with or without quantities of rounded pebbles. Surface treatments include fabric impressed, cord marked, and net impressed. Vessels are usually conoidal, although simple, hemispherical, and globular bowls are also present. The Mount Pleasant series is found from North Carolina southward to the Savannah River (being evidenced by the "Untyped Series" in Trinkley 1981b). North Carolina dates for the series range from A.D. 265±65 (UGA-1088) to A.D. 890±80 (UGA-3849). The several dates currently available from South Carolina (such as UGA-3512 of A.D. 565±70 from Pinckney Island) fall into this range of about A.D. 200 to 900.

The McClellanville (Trinkley 1981a) and Santee (Anderson et al. 1982:302-308) series are found primarily on the north central coast of South Carolina and are characterized by a fine to medium sandy paste ceramic with surface treatment of primarily v-shaped simple stamping. While the two pottery types are quite similar, it appears that the Santee series may have later features, such as excurvate rims and interior rim stamping, not observed in the McClellanville series. The Santee series is placed at A.D. 800 to 1300 by Anderson et al. (1982:303), while the McClellanville ware may be slightly earlier, perhaps A.D. 500 to 800. Anderson et al. (1982:302-304; see also Anderson 1985) provide a detailed discussion of the Santee Series and its possible relationships with the McClellanville Series. Anderson, based on the Santee area data from Mattassee Lake, indicates that there is evidence for the replacement of fabric impressed pottery by simple stamping about A.D. 800 (David G. Anderson, personal communication 1990). This may suggest that McClellanville and Santee wares are closely related, both typologically and culturally. Also probably related is the little known Camden Series (Stuart 1975) found in the inner Coastal Plain of South Carolina.

The best data concerning Middle Woodland Coastal Zone

assemblages comes from Phelps' (1983:32-33) work in North Carolina. Associated items include a small variety of the Roanoke Large Triangular points (Coe 1964:110-111), sandstone abraders, shell pendants, polished stone gorgets, celts, and woven marsh mats. Significantly, both primary inhumations and cremations are known from the Mount Pleasant phase. Phelps notes that:

[a] distinctive cultural feature of Middle Woodland age in the South Coastal region is the rather extensive distribution of low, sand burial mounds . . . . The high frequency of secondary cremation, platform pipes, and other objects in the mounds, and the fact that at least some of them seem to be placed away from their contemporaneous habitation sites, points to southern influence during this period (Phelps 1983:35).

Phelps goes on to note that, "[t]heir known spatial extent is limited . . . , and no comparable structures have been reported from . . . South Carolina. . . . Further research . . . is needed to determine relationships [of North Carolina mounds] with . . . those on the Georgia coast" (Phelps 1983:35).

Sand burial mounds have been known from the Georgia and southern South Carolina Coastal Zone since C.B. Moore's investigations in 1898. Recent studies include those by the American Museum of Natural History on St. Catherines Island, Georgia, which document the Early to Late Woodland use of sand burial mounds (Larsen and Thomas 1982; Thomas and Larsen 1979), as well as the re-investigation of the Callawassie Island burial mound (38BU19) in Beaufort County, South Carolina (Brooks et al. 1982). The presumed burial mound gap between southern coastal South Carolina and southeastern coastal North Carolina has been filled by the 1983 excavations of the Buck Hall sites in Charleston County where Trinkley and Zierden were able to determine that the low sand mounds were covering poorly preserved secondary burials. Rathbun has also identified an ossuary (38HR36) from Horry County, South Carolina (see Conner 1985; Hyman 1983).

Consequently, it appears that both ossuaries and sand mounds are found along the entire South Carolina coast, although precise dating and thorough understanding of their cultural significance has yet to be achieved. As Wilson notes, "the sand burial mounds . . . cannot be associated with any one prehistoric physical type or aboriginal group," for in North Carolina they are found in the context of probable Iroquoian, Siouan, and Algonquin populations (Wilson 1982:172). The available information, however, suggests a relatively egalitarian society was common to all. Anderson suggests that, "these mound/ossuary complexes appear to represent principal burial areas for local lineages or other currently unrecognized social entities" (Anderson 1985:56).

On the Coastal Plain of South Carolina, researchers are

finding evidence of a Middle Woodland Yadkin assemblage, best known from Coe's work at the Doerschuk site in North Carolina (Coe 1964:25-26). Yadkin pottery is characterized by a crushed quartz temper and cord marked, fabric impressed, and linear check stamped surface treatments. The Yadkin ceramics are associated with medium-sized triangular points, although Oliver (1981) suggests that a continuation of the Piedmont Stemmed Tradition to at least A.D. 300 coexisted with this Triangular Tradition. The Yadkin series in South Carolina was first observed by Ward (1978, 1983) from the White's Creek drainage in Marlboro County, South Carolina. Since then, a large Yadkin village has been identified by DePratter at the Dunlap site (38DA66) in Darlington County, South Carolina (Chester DePratter, personal communication 1985) and Blanton et al. (1986) have excavated a small Yadkin site (38SU83) in Sumter County, South Carolina. Anderson et al. (1982:299-302) offer additional typological assessments of the Yadkin wares in South Carolina.

These Middle Woodland Coastal Plain and Coastal Zone phases continue the Early Woodland Deptford pattern of mobility. While sites are found all along the coast and inland to the Fall Line, shell midden sites evidence sparse shell and artifacts. Gone are the abundant shell tools, worked bone items, and clay balls. Recent investigations at Coastal Zone sites such as 38BU747 and 38BU1214, however, have provided some evidence of worked bone and shell items at Deptford phase middens (see Trinkley 1990).

In terms of settlement patterns, several researchers have offered some conclusions based on localized data. Michie (1980a:80), for example, correlates rising sea levels with the extension of Middle Woodland shell middens further up the Port Royal estuary. Scurry and Brooks (1980:75-78) find the Middle Woodland site patterning in the Wando River affected not only by the sea level fluctuations, but also by soil types (see also Trinkley 1980a:445-446). They suggest that the strong soil correlation is the result of upland sites having functioned as extraction areas, principally for exploitation of acorns, hickory nuts, and deer. Shell midden sites, they suggest, also represent seasonal camps and therefore exhibit small size, low artifact density, and infrequent re-occupation. Ward's (1978) work in Marlboro County suggests that interior site patterning changed little from the Early to Middle Woodland. Sites continue to be found on the low, sandy ridges overlooking hardwood swamp floodplains, which suggests that while pottery styles changed, site locations, and presumably subsistence, did not (see also Ferguson 1976). Drucker and Anthony's (1978) work in Florence County, South Carolina reveals virtually continuous short-term occupation along the terraces associated with the floodplain of Lynch's Lake. DePratter's work at the Dunlap site, however, suggests that a few, relatively stable villages were present in the Middle Woodland.

The Piedmont Middle Woodland Period includes the extensive

development of Cartersville pottery in Georgia (Caldwell 1958). It has been suggested that during this Middle Woodland Cartersville focus there was a shift away from nut resources, as part of a "primary forest efficiency" development (Caldwell 1958:46). The older Cartersville fabric impressed and check stamped wares continue to be used, but the newly introduced Cartersville Simple Stamped style characterizes the period. Garrow (1975:22-23) notes that it was during the Cartersville focus that the Hopewell tradition spread into Georgia. These Hopewell influences, however, do not appear to have spread into South Carolina, and Cartersville ceramics themselves are confined to the Savannah drainage in South Carolina.

Work by Kelly (1972) in the area of Fairfield and Chester counties, South Carolina found a relatively low density of Middle Woodland sites, although the largest sample included what were probably Yadkin sherds (see also Coe 1964).

The presence of Pigeon and Connestee ceramics, originally identified from western North Carolina by Holden (1966) and Keel (1976), has been documented in South Carolina. The Pigeon series, similar to the Cartersville focus of Georgia, dates from about 300 B.C. to A.D. 100, while the following Connestee wares are dated from A.D. 100 to at least A.D. 600 and consist of brushed, simple stamped, cord marked, and check stamped surface finishes on a fine sandy paste pottery. These wares are found sparsely scattered through the South Carolina Piedmont (Goodyear et al. 1979; Rodeffer et al. 1979:51-42). Only limited excavations have been conducted recently at only one of these sites, 38LU107, in Laurens County, South Carolina (Wood and Gresham 1980). Beuschel (1976) reports on excavations at the Cone Creek (38OC8) and Tree Nursery (38PN23) sites in the Keowee-Toxaway Reservoir during 1966. Both sites yielded strong Pigeon and Connestee components, although little else is known about the occupations.

It is not yet clear whether the Middle Woodland Piedmont occupations continued the Early Woodland orientation toward riverine sites, or whether inter-riverine utilization became more common (cf. Anderson 1985:54-55; Goodyear et al. 1979:229-230, 251; Rodeffer et al. 1979:52). Coe (1983:176) seems to suggest that, at least in North Carolina, Middle Woodland sites are evenly distributed in the Appalachian area. Anderson and Joseph (1988) note that Middle Woodland sites are common in the upper Savannah drainage and suggest some form of "residential mobility or seasonal movement" although "the nature of these occupations . . . remains largely unknown" (Anderson and Joseph 1988:230). In any event, it is clear that the cultural conservatism of the coastal groups is mirrored in the Piedmont.

#### Late Woodland

In many respects the South Carolina Late Woodland may be

characterized as a continuation of previous Middle Woodland cultural assemblages. While outside the Carolinas there were major cultural changes, such as the continued development and elaboration of agriculture, the Carolina groups settled into a lifeway not appreciably different from that observed for the previous 500 to 700 years (cf. Sassaman et al. 1989:14-15). This situation would remain unchanged until the development of the South Appalachian Mississippian complex (see Ferguson 1971).

The Late Woodland on the extreme southern South Carolina Coastal Zone is characterized by the St. Catherines phase, first defined by Caldwell (1971) based on his St. Catherines Island work. St. Catherines ceramics are characterized by fine clay tempering (obviously finer than the preceding Wilmington sherd temper) and by carefully smoothed or burnished interiors. Surface treatments include fine cord marked, burnished plain, and net impressed (DePratter 1979:119, 131-132), although sparse quantities of fabric impressed pottery are also observed from South Carolina (Trinkley 1981b:82) and Georgia (Larsen and Thomas 1982:304-305). Caldwell viewed the St. Catherines pottery as a refinement of the Wilmington tradition of sherd tempering (Caldwell 1971:91), and sand burial mounds continue to be a significant aspect of the assemblage (Brooks et al. 1982; Larsen and Thomas 1982; Trinkley 1981b:90-92).

While a number of St. Catherines burial mounds have been studied, only one midden area, Victoria Bluff (38BU347), in Beaufort County, has been even briefly tested (Trinkley 1981b:73-78). At this site the economy was based on shellfish collection and there is substantial evidence of a winter-early spring occupation. There is, as yet, no documentation of a seasonal round, although some large St. Catherines sites have been found which suggest at least semi-permanent villages (Trinkley 1990).

The St. Catherines pottery, previously given a terminal date of about A.D. 1150 by DePratter (1979:111), probably dates into the fourteenth century, based on the Victoria Bluff (38BU347) and Pinckney Island (38BU67, 38BU168) work where dates of A.D. 1380±75 (UGA-3516) and A.D. 1535±65 (UGA-3514) were obtained (Trinkley 1981b). The tenacity of this simple lifestyle suggests that the effects of the Gaule intrusion was relatively minor in many ways, or they at least co-existed with the native inhabitants whose lives were generally unchanged.

Farther north along the Carolina coast, Anderson et al. (1982:303-304) suggest a continuation of the Santee series into the Late Woodland. The Hanover and Mount Pleasant series may also be found as late of A.D. 1000. Along the southeastern North Carolina coast, South (1960) has defined the Oak Island complex, which is best known for its shell tempered ceramics with cord marked, fabric impressed, simple stamped, and net impressed surface finishes. The phase is briefly discussed by Phelps (1983:48-49), but curiously this manifestation is almost unknown south of the Little River in

South Carolina. Very little is known about the northern coastal South Carolina Late Woodland complexes, although sites such as 38GE32 may document the occurrence of village life in the Late Woodland.

While the Late Woodland in Georgia is represented by the Swift Creek and Napier pottery styles (Garrow 1975:24), these ceramics are so rare in the Rucker's Bottom area of the Savannah River that Anderson and Schuldenrein note, "using them to infer later Woodland components almost automatically leads to the further inference that the whole region was largely depopulated" (Anderson and Schuldenrein 1985:719-720). Anderson and Joseph, observing the uncommon occurrence of Swift Creek and Napier pottery in the Piedmont, suggest:

a low local population density, at least by groups using these wares. The infrequent occurrence of Napier and Swift Creek complicated stamped wares in the Savannah River region and areas to the east may indicate comparatively minimal interaction between groups using these wares, which are common in southwestern and western Georgia, and local Woodland groups. These local populations, it has been argued, employed ceramics . . . traditionally subsumed within the Cartersville and Connestee series. In this view, where Swift Creek and Napier ceramics have been found in the Savannah River region, they may document brief occupations by groups based elsewhere (Anderson and Joseph 1988:247; cf. Wood et al. 1986:343).

Anderson and Schuldenrein (1985:720) suggest that the Cartersville wares, traditionally accepted as Middle Woodland, continue well into the Late Woodland period. They also suggest that it is during this Late Woodland period when:

the first conclusive evidence for extended occupation of the floodplain appears, in the form of pits, hearths, posts, and scatters of shell (Anderson and Schuldenrein 1985:720).

There is only somewhat vague and tantalizing evidence of agriculture or the use of domesticated plants during this period in South Carolina. Investigations at 38AN8 have yielded carbonized gourd rind, as well as a very small sample of squash and corn pollen (see Wood et al. 1986:106). Agriculture, however, cannot be documented in any meaningful way until the rise of the South Appalachian Mississippian period, either in the Piedmont or on the coast.

Along the Fall Line in South Carolina Brooks and Scurry (1980) have attributed Yadkin ceramics with a Late Woodland occupation, although a Middle Woodland occupation seems equally likely.

In spite of the possible extension of Cartersville into the Late Woodland, Piedmont surveys have failed to identify any appreciable amount of Cartersville pottery. While this apparent absence of Late Woodland pottery over much of the South Carolina Piedmont may be a result of incomplete field work, an alternative explanation is that the historic aboriginal population areas and distributions may have time depth not presently recognized (see Goff 1974:8-10; Goodyear et al. 1979:231; Royce 1888). Much of the South Carolina Piedmont may be within a buffer zone or hunting territory claimed by two or more groups (such as was the situation in the historic period with the Cherokee to the northwest and the Catawba to the northeast), but largely uninhabited by either group. Anderson and Joseph (1988) are unconvinced of this explanation and suggest instead that the "plain and simple stamped wares traditionally documented as Cartersville or Connestee may extend later in time than previously thought in the upper Savannah River" (Anderson and Joseph 1988:246). Only additional surveys and excavations in the South Carolina riverine Piedmont will provide the data necessary to assess Late Woodland occupation.



KNOWN WOODLAND PERIOD SITES AND SITE TYPES

Scope of the Woodland Period in South Carolina

As of June 8, 1990 there are 12,327 archaeological sites recorded at the South Carolina Institute of Archaeology and Anthropology for the state of South Carolina. While it is likely that many of these represent Woodland Period occupations, information could be cost-effectively obtained only for a small sample of counties which are currently computerized and those data are summarized in Table 1.

Table 1  
Number of Woodland Period Sites in Selected  
South Carolina Counties

County	Total # Sites	Prehistoric Sites	Woodland Sites	Eligible Woodland Sites
Allendale	175	163 (93%)	70 (43%)	10 (14%)
Cherokee	75	50 (67%)	4 (8%)	1 (25%)
Dorchester	110	56 (51%)	29 (52%)	1 (3%)
Kershaw	190	152 (80%)	79 (52%)	2 (2%)

Clearly it would be inappropriate to place too much confidence in this small sample, however, these data do suggest some interesting observations. First, it appears that as one moves from the Piedmont into the Coastal Zone the total percentage of prehistoric sites may decrease, as there are a greater number of historic sites recorded from the coastal area. More significantly, however, the percentage of Woodland Period sites will probably increase from the Piedmont to the Coastal Zone, either because of survey bias or because the Piedmont tends to have a lower proportion of Woodland sites (the latter, of course, has been suggested by the previous review).

Using what seems to be a reasonable estimate of 73% to represent the percentage of prehistoric sites in South Carolina, it may be suggested that South Carolina may currently have recorded approximately 9000 prehistoric sites. Using a factor of .6 (although the highest percentage shown in Table 1 is 52%, 60% has been chosen since it is likely that the Coastal Plain will have a high density of Woodland Period sites) to represent Woodland sites would yield about 5400 Woodland Period sites currently known for South Carolina.

Estimating eligible sites, even at this gross level, is even more difficult. Few of the sampled site forms provide any real

documentation of eligibility and most fail to indicate significance at any level. Complicating matters even further is the fact that many sites are considered eligible for compliance purposes with the ultimate intention to conduct data recovery. For such sites there is often little potential for green spacing or nomination. While the current sample suggests a range from 2% to 25% of the known sites may be eligible, even a modest 15% estimate suggests that over 800 Woodland Period sites may be eligible for inclusion on the National Register of Historic Places. Yet, as will be discussed in a following section, only 26 Woodland Period sites have actually been placed on the National Register (representing perhaps only 3% of the total eligible sites).

### Site Types

The previous discussions have demonstrated that for many areas of South Carolina discussion of Woodland Period site types may be premature. Even in the Coastal Zone where, because of intensive development, there is an extensive catalog of site survey information little effort has been directed toward the identification of specific site types. One of the earlier efforts was that by Widmer (1976) who proposed three types of Middle Woodland shell midden sites, based on his work on Victoria Bluff:

- multiple (20+) shell heaps in open site areas with dense shell
- small clusters (2-6) of shell heaps including both dense and loose middens
- single shell heaps with only loose shell in an area less than 30 feet in diameter.

Trinkley (1990) has proposed a somewhat similar scheme covering both late Early Woodland (i.e., Deptford) and Middle Woodland sites in the Beaufort area. Four site types are tentatively defined, including:

- Type 1 - small (ca. 500 square feet), thin (<1 foot) middens confined to the immediate shore area, on both well and poorly drained soils
- Type 2 - large (over 500 square feet) sites consisting of discrete shell middens or heaps found within 100 feet of the marsh or an interior slough, typically on well drained soils
- Type 3 - variable shell midden deposits found inland from a water source 200 to 800 feet usually on well drained soils

- Type 4 - non-shell midden sites situated inland from the shore on high, well-drained soils.

Comparing these two schemes suggests that Widmer's third type of shell midden site is essentially similar to Trinkley's Type 1 midden, while Widmer's first and second site types probably best fit Trinkley's Type 2 midden category, although it may be appropriate to subdivide the Type 2 middens at a finer scale, as suggested by Widmer.

Detailed site type analyses, however, are available only for the coastal zone. As one continues inland site information becomes increasingly hazy. The suggestions offered in Table 2, therefore, are especially susceptible to revision and refinement.

These sites are manifested principally by the occurrence of fired clay pottery, the definitive marker for the period. These pottery types are briefly outlined in Appendix 1. Also, there are a small number of defined projectile point types which are also typically associated with the Woodland Period and these are discussed in Appendix 2.

In addition, as evidenced by Table 2, shell middens are frequently associated with Woodland Period sites. While no Coastal Zone Archaic Period sites and shell middens have been identified, there are numerous South Appalachian Mississippian shell midden sites.

Burial mounds (not to be confused with pyramidal temple mounds) are another diagnostic feature of the Woodland Period, being found from the late Early Woodland (i.e., Deptford phase) through the Late Woodland (i.e., St. Catherine's phase). Mortuary practices include flexed (or semi-flexed) primary inhumations, secondary inhumations (where the body has been allowed to at least partially decay and then is gathered up for burial), and cremations (where the body is burnt). In both secondary and cremation burials there may multiple individuals represented. Burial goods during the Woodland Period are uncommon.

While not discussed in any detail in the literature, there are also special activity sites, such as quarries and fish weirs, which are associated with the Woodland Period. These sites, however, may frequently be difficult to tie to a specific period of time unless diagnostic materials are present.

#### Sites Listed on the National Register

A total of 26 Woodland Period sites in South Carolina are currently listed on the National Register of Historic Places. These sites are tabulated in Table 3.

Table 2.  
Woodland Period Site Types in South Carolina

Coastal Zone		
Early Woodland	small shell middens adjacent to marsh	} seasonal campsites
	large shell middens adjacent to marsh	} seasonal campsites
	shell rings adjacent to or in marsh	} permanent occupations
	small, non-shell sites adjacent to marsh or sloughs	} seasonal campsites
	small, non-shell sites inland from water sources	} seasonal or special purpose sites
Middle Woodland	small shell middens adjacent to marsh or sloughs	} seasonal campsites
	large shell middens adjacent to marsh	} seasonal campsites
	shell middens slightly inland from marsh	} seasonal campsites
	small, non-shell sites adjacent to marsh or sloughs	} seasonal campsites
	sand burial mounds	} mortuary sites
Late Woodland	shell middens adjacent to marsh or sloughs	} seasonal campsites
	shell middens slightly inland from marsh	} seasonal campsites
	non-shell midden sites adjacent to marsh or sloughs	} seasonal campsites
	sand burial mounds	} mortuary sites
Coastal Plain		
Early Woodland	upland sites at spring heads or confluence of small streams	} seasonal camps
	small sites on swamp edges	} seasonal campsites
	large sites on swamp edges	} semi-permanent camps
Middle Woodland	upland sites at spring heads or confluence of small streams	} seasonal camps
	small sites on swamp edges	} seasonal campsites
	large sites on swamp edges	} semi-permanent camps
	sand burial mounds	} mortuary sites
Late Woodland	sites on swamp edges	} semi-permanent camps
	sand burial mounds	} mortuary sites
Piedmont		
Early Woodland	riverine sites	} seasonal or semi-permanent camps
Middle Woodland	riverine sites	} seasonal or semi-permanent camps
	inter-riverine sites	} seasonal camps
Late Woodland	riverine sites	} seasonal or semi-permanent camps
	inter-riverine sites	} seasonal camps

Table 3.  
Woodland Period Sites on the National Register

Site	Site Number	Site Type
Silver Bluff	38AK7	CP, MW, campsite
Allendale Chert Quarry District	38AL23	CP, W, extractive
Fennell Hill	38AL2	CP, EW, shell midden
Red Bluff Flint Quarries	38AL14	CP, W, extractive
Cal Smoak	38BM4	CP, W, campsite
Chester Field	38BU29	CZ, EW, shell ring
Fish Haul	38BU805	CZ, EW, n-s midden
Hassell Point	38BU20	CZ, MW, burial mound
Sea Pines	38BU7	CZ, EW, shell ring
Skull Creek	38BU8	CZ, EW, shell ring
Keller	38BK83	CP, W, campsite
Buyck's Bluff	38CL17	CP, W, campsite
Prehistoric Indian Village	38CL4	CP, EW-MW, village
Auld	38CH41	CZ, EW, shell ring
Bass Pond	38CH124	CZ, EW, campsite
Buzzard's Island	38CH23	CZ, EW, shell ring
Fig Island	38CH42	CZ, EW, shell ring
Hanckle Mound	38CH7	CZ, EW, shell ring
Horse Island	38CH14	CZ, EW, shell ring
Sewee Mound	38CH45	CZ, EW, shell ring
Spanish Mount	38CH62	CZ, EW, shell midden
Evy Kirkley	38CT25	CP, EW, campsite
Minim Island	38GE46	CZ, EW, shell midden
Manning	38LX50	CP, W, campsite
Sam	38LX68	CP, EW, campsite
Alan Mack	38OR67	CP, W, campsite

CZ = Coastal Zone, CP = Coastal Plain (including Fall Line)  
 EW = Early Woodland, MW = Middle Woodland, W = Woodland  
 n-s = non-shell midden site

It is clear from Table 3 that the range of Woodland Period sites listed on the National Register is very limited. There are no sites from the Piedmont and there is only a very limited representation of Middle and Late Woodland sites. Only five of the 26 sites have been listed within the past 10 years; the remainder were listed between 1970 and 1979. These data suggest that the National Register is failing to serve as a useful "bank" of archaeological data and is offering protection to only a very limited number of Woodland Period archaeological resources. It seems likely that as the National Register nomination process has become more complex and time consuming, archaeologists have been reluctant to devote the time necessary to complete the nomination forms.

Of course, a great many Woodland Period sites have been recognized by the State Historic Preservation Officer as "eligible

for inclusion on the National Register" and these sites are offered essentially the same degree of protection as those actually placed on the National Register (within the context of section 106 of the National Historic Preservation Act). Unfortunately, there is no listing of these sites and no way to create such as list other than to examine the correspondence of the State Historic Preservation Office for the past 20 years.

### Evaluation Criteria

Woodland Period sites may be evaluated on the basis of several equally valid criteria. As with any archaeological resource, Woodland sites may be assessed in terms of various archaeological "properties" as suggested by Glassow (1977), including:

- integrity, referring to the degree of preservation or amount of in situ remains at a site. Integrity relates to the condition of the site and the artifacts it contains.
- clarity, which indicates how well the strata or subsurface features may be distinguished. As such it may vary considerably over a single site or from one investigator's ability to another.
- variety, which refers to the qualitative variability in the archaeological remains found at a particular site, including the temporal and functional range of artifacts.
- quantity, referring to the frequency or density of the artifacts or subsurface features.
- environmental context, which attempts to factor into preservation assessments information on the nature of the site environment to ensure that sites from a variety of different habitats are preserved.

This approach has been used by a number of researchers in South Carolina over the past 12 years (e.g., Taylor and Smith 1978; Roberts and Caballero 1988). Glassow's archaeological "properties" or assessment characteristics are useful since they may be given different weights (usually with integrity given the greatest importance since without it interpretation of the archaeological remains will be tenuous). In addition, these qualities stress properties of the archaeological record rather than a site's potential to address a limited, and possibly transient, research design.

This approach, however, stands in contrast to Butler (1987) who suggests that the only valid measurement of significance must be based on what he calls the "theoretical and substantive knowledge of the discipline" at any particular moment in time (Butler 1987:821). While the use of this approach over that

suggested by Glassow (1977) has been suggested by a reviewer, Butler himself acknowledges, "we cannot foresee future research questions, and we may not possess the theory to interpret and understand all this is present" (Butler 1987:822). His solution to this problem is to document what is found, in the hope that it will provide answers to future questions. There can be little disagreement with the belief that we cannot foresee future questions or management needs. Even more certain is that archaeologists should, in so far as possible, ensure "complete" documentation. The problem centers on Butler's belief that importance must be based solely on the current "theoretical and substantive knowledge of the discipline." The two views can be blended together, rather than used in isolation (such an approach, for example, has been successfully proposed by Anderson et al. 1990).

Butler (1987:823-824) is correct to stress the importance of data redundancy in both site-specific and particularly regional contexts. Unfortunately, redundancy is even more difficult to assess in advance than "significance." In reviewing excavations at Woodland Period sites, even on the coast of South Carolina where the bulk of the work has taken place, there is little evidence that anything approaching redundancy is close to occurring. Rather, what is being seen is that archaeologists are only now beginning to realize the diversity and complexity of the settlement and subsistence systems.

At the present time the emphasis must be placed on asking the right questions at the right sites, not limiting the number of sites at which these questions are asked. Clearly, asking the right questions at the right sites can be difficult, and requires an understanding of the "theoretical and substantive knowledge of the discipline." In addition, to be sure of the answers it is essential to have some considerable degree of "redundancy." This may be viewed as costly by some, but so too is the permanent loss of our archaeological heritage.

There are a number of broad research questions against which all Woodland Period sites may be judged. Facile as it may sound, research concerning the Woodland Period in South Carolina is still in its infancy. Research questions may be subsumed under three very general, and broad, research categories: typology, settlement, and subsistence.

A great deal of attention has been paid to typological and cultural history reconstructions for various Woodland Period groups. While such work is essential, certainly not all of this research has been very profitable. Still, there are major questions left unresolved concerning certain Middle and Late Woodland ceramic sequences. Of particular importance is the viability of the Mount Pleasant/McClellanville/Santee and the Deptford/Deep Creek series in the Early and Middle Woodland in the South Carolina Coastal Zone

and Coastal Plain. Intensive investigations are necessary to determine whether these three series are simply regional variations, or whether they represent temporally and cultural discrete entities. In the Piedmont, there remain questions posed by Anderson and Joseph (1988:230) regarding the dating of Cartersville. In the Late Woodland, there is still a need for a thorough, definitive examination of the St. Catherines wares on the coast, and the Cartersville, Connestee, Swift Creek, and Napier series in the Piedmont (Anderson and Joseph 1988:245).

In reviewing recent literature on typological research, especially for Coastal Zone sites, several problems become immediately apparent. First, frequently typological research is attempted at multicomponent shell midden sites which, upon excavation, clearly reveal extensive mixing. Even at sites where the various components might be separated, excavation is rarely conducted on a scale sufficient enough to adequately separate the various occupations. Second, there is still a minority of researchers who, for whatever reasons, fail to incorporate known ceramic typologies, and simply characterize the collections on the basis of surface treatments and temper. This approach provides virtually no useful information for comparison or synthesis. Third, the process of typological and temporal studies is occasionally hampered by well-meaning researchers who have inadequate experience with the ceramics of the local region. Finally, too many projects are inadequately funded, with the result that radiocarbon dates are not obtained and fine-grained ceramic analyses are abandoned in favor of gross overviews.

There are also major typological issues surrounding the nature of projectile point types associated with the Woodland Period in South Carolina. Previous discussions have remarked on the divergence of opinion regarding the reduction of point size during the Early Woodland, the effect of different raw materials on typological statements, and the use of re-cycled material. During the Middle and Late Woodland there is discussion surrounding the appropriateness of using metric-based reporting over traditional typologies.

Future typological research should emphasize several characteristics:

- collection and interpretation of appropriate radiocarbon dates clearly associated with particular ceramics and projectile points;
- concentration on Middle and Late Woodland typological questions at sites clearly able to provide data appropriate to those periods;
- incorporation of ceramic analysis techniques such as paste and cordage analyses;



- incorporation of raw material use into projectile point studies;
- refinement of Middle and Late Woodland triangular projectile point typologies.

These discussions have alluded to the very limited information available on Woodland Period settlement systems. Smith has noted that:

there is relatively little information available concerning the lifeways of southeastern populations during this period. . . . it is still not possible to establish accurately the timing, duration, and nature of seasonal population movements between different sites within the various settlement systems that existed across the southeast (Smith 1986:37, 41).

This same view has been repeated by Anderson and Joseph (1988) in their examination of the Woodland Period in the Piedmont Savannah River drainage.

In the Coastal Zone and Coastal Plain there are a myriad of sites from virtually every time period which appear to float in space about which researchers have little or no information concerning the more complex settlement system of which they are a part. In the late Early Woodland there are small Deptford shell middens, large Deptford shell middens, large Deptford interior sites, small Deptford interior sites, as well as Deptford sites near the marsh with little or no evidence of shellfish remains.

Two problems tend to characterize settlement studies, at least for the coastal area. The first is that too infrequently have researchers made an intensive effort to examine the subsistence base of the sites being excavated. While these problems will be discussed in greater detail below, it is appropriate to mention that if the settlement system is to be understood, the subsistence base and seasonality of the sites must be clearly documented. The second major problem is there is a pervasive bias among many archaeologists against "small" sites. Examination of site forms for Woodland Period shell middens constantly reveal descriptions (and justifications for the site's non-eligibility) such as "too small," "too shallow," or "too diffuse" "to yield significant information;" or "typical of the numerous, small coastal shell middens." As a consequence, a vast number of South Carolina's archaeological resources are being "written off" and doomed to extinction. The ultimate result of this approach is the collection of data skewed toward the large sites, with virtually no information on the function of the small sites in the total settlement pattern.

Future settlement studies should incorporate several approaches:

- classification of sites in such a manner that all site types are sampled for either long-term preservation or data recovery;
- excavation techniques which ensure that even small sites are investigated in a manner to maximize their potential to contribute to our understanding of the total settlement system;
- excavation of both midden and non-midden areas in appropriate intensity to search for evidence of structures, as well as artifactual remains;
- intensive subsistence studies capable of providing seasonality indications.

Of particular importance at all sites is adequate sampling to ensure the recovery of not only "artifacts," but also features such as pits, activity areas, and house patterns. The documentation of both positive and negative evidence is of equal value, but both depend on adequate excavation. Emphasis on the shell midden, for example, to the neglect of adjacent areas, may bias studies by the failure to recover food processing locations or structural remains. One reviewer strongly urged the more frequent use of block excavations and piece-plotting of artifacts. The importance of both techniques cannot be over emphasized and should be used to better explore intra-site patterning and activity areas.

Questions of subsistence are closely associated with the broader scope of settlement and environmental zones. Unfortunately, it has been only recently that many sites, particularly those in the Coastal Zone, have been examined in any detail for subsistence remains. Projects all too often fail to adequately incorporate ethnobotanical, faunal, and shellfish studies. Even less often do the studies provide for an appropriate and adequate interdisciplinary team approach with the specialists visiting the sites and the various subsistence studies integrated into the final report (rather than being consigned to an appendix). These problems may be related to inadequate funding (often the result of the pressures associated with "contract" archaeology), inadequate field and analysis time (again, often related to "contract" archaeology), the limited experience many archaeologists have with interdisciplinary studies, and the use of inappropriate field collection techniques.

The problems associated with "contract" archaeology have no simple solutions and are beyond the scope of this review. It is true that integration of specialists such as ethnobotanists, zooarchaeologists, and malacologists requires both additional funding and additional time. The benefits of such an approach, however, can hardly be understated. Perhaps the most serious problem is the excavation techniques frequently used on Coastal

Zone shell midden sites. Few sites are subjected to consistent field techniques and rarely is data quantified in a manner to make it useful to other researchers.

Wing and Quitmyer (1985) have provided one of the few detailed discussions of sampling for faunal remains. Their work reveals that the percentage of fish, relative to other faunal remains, increases from 34% with the use of 1/4-inch mesh to about 76% with the use of 1/8-inch mesh (Wing and Quitmyer 1985:57). Even finer mesh, such as 1/16-inch used in water screening, produces a greater recovery of fish remains relative to other species. The work by Kent (1988) and Lawrence (1988) provides similar sampling suggestions for the collection of shellfish remains, while the edited collection of Hastorf and Popper (1988) provides similar studies for ethnobotanical remains. In combination, these studies document that any sampling strategy is going to introduce biases. The ultimate goal of sound archaeological technique is not really the elimination of bias (which is probably impossible), but the clear acknowledgement of the bias, the recognition of the impact it may have on the cultural interpretations, and the attempt to control the effects of bias.

One reviewer has remarked that many archaeologists feel that the use of 1/4-inch is adequate for screening Coastal Zone shell middens, if fine screened column samples and flotation samples are collected. The use of 1/8-inch mesh should never be viewed as removing the obligation to collect appropriate flotation samples, since dry screening is extraordinarily damaging to carbonized materials and even 1/8-inch mesh rarely produces ethnobotanical materials other than wood charcoal and nutshell fragments (both of which can be obtained from flotation samples). Likewise, the use of 1/8-inch mesh does not eliminate the need for shell midden column samples for the study of shellfish.

The use of this finer mesh, however, serves an important function by ensuring more adequate (and more representative) recovery of faunal materials. Of course, it is possible that these data could be obtained in a column sample (if it were of sufficient size). There are, however, several problems with this approach. It requires yet another decision to be made regarding the adequacy of the sampling scheme and interval. Typically, few archaeological sites are totally excavated and many compliance projects excavate well under 5% of the site. To further reduce data recovery efforts by relying on column samples alone seems short-sighted. In addition, while column samples may provide evidence of small faunal species (such as fish), they rarely provide what can be considered an adequate sample for studies of biomass, diversity, and equitability.

All subsistence research should attempt to incorporate a full range of both analytical techniques, as well as interpretations. Questions of paramount importance include:

- seasonality of the remains,
- evidence of the habitats being exploited,
- intensity of exploitation,
- methods of exploitation,
- demographic analysis of the resources,
- importance of each resource to the diet at the site being investigated through appropriate analytical techniques such as biomass, diversity, and equitability determinations.

Future research on Coastal Zone Woodland Period subsistence should include:

- careful integration of faunal, ethnobotanical, and shellfish data to ensure that all aspects of the diet are adequately studied and integrated into the report;
- the use of certain similar analytical methods, including, but not limited to, minimally 1/8-inch dry screening, the collection of flotation samples, and the collection of shell columns, should be employed at all sites;
- quantification of midden content (minimally soil vs. shell) by weight.

It is appropriate for both Coastal Plain and Piedmont research to incorporate the same concern for the recovery of subsistence information. While the acidity of Coastal Plain soils (minus the buffering effects of shell remains) and Piedmont soils may reduce the preservation potential of faunal remains, there remains the potential for ethnobotanical studies and the incorporation of new techniques such as the examination of stone-tool edges for blood antigen residues (Hyland et al. 1990).

One reviewer has noted that often the problem is not that various studies are absent, but that they are not integrated into the final study in any meaningful way -- there is a failure to examine the total site assemblage, including the ceramic, lithic, floral, and faunal data. This is a valid concern and may be at least partially corrected by more intensively integrating the various specialists into the field work, as well as the production of the final report.

One topic which cross-cuts both settlement and subsistence is the investigation of human remains. The importance and potential of

forensic studies has been well presented by Rathbun (1989). Several significant points should be emphasized:

- physical remains should be carefully studied by a forensic anthropologist to maximize the available data and, in many cases, this will require field examination of the material to ensure that metric data are not lost during the removal of the remains;
- physical remains should be professionally curated at a central repository, be inventoried, and provided with secure care.

However, there are ethical and legal questions surrounding such studies and the long-term curation of human remains (see, for example, Quade 1989, 1990). These problems are being confronted by the Smithsonian Institution, with the result that Native American human remains (as well as sacred objects) are being returned to tribal entities. It seems appropriate that these questions also be addressed by the professional archaeologists in South Carolina.

Finally, one reviewer has expressed some disappointment that these research questions so strongly stress typology, settlement, and subsistence, and has wondered if more attention should not be directed to questions of cultural and socio-political process. I remain sympathetic to these concerns and agree that, about process - dynamic relationships between components of a system that cause the system to change - we know very little" (Sassaman et al. 1989:309). Yet, I have seen relatively few studies which treat process successfully (success being defined by the use of convincing, empirical data). Sassaman et al. also realize this problem and state, "indeed, we know too little about certain cultural patterns during certain periods to proceed very far with processual inferences" (Sassaman et al. 1989:309). Hopefully, research questions regarding process can (and will) be integrated into the context of Woodland Period research when this current study is revised and updated.

## TREATMENT GOALS AND PRIORITIES

South Carolina has a tremendous number of Woodland Period archaeological resources, including shell middens, campsites, burial mounds, and extractive or special purpose sites. On occasions, the sheer number of these resources operates against the protection of the sites. Developers and land planners may balk at preserving a shell midden or village, since they are found "everywhere." Yet, the resources are clearly finite and in areas of rapid development, such as along the South Carolina coast, these sites are under extraordinary pressures. In addition to the direct impact development has through actual construction, there are equally serious secondary impacts, such as erosion caused by increased boat traffic and improved access with resulting vandalism of sites. Calculate in natural destructive processes such as erosion, and many sites will not survive another decade.

It is essential to future generations of South Carolinians that these archaeological resources are preserved. Not only do they represent the evidence of past cultural adaptation and land use, but they provide ties to the past which are essential for an appreciation of our heritage. This section provides suggestions for the identification, evaluation, registration, and treatment of Woodland Period sites in South Carolina.

### Identification

At the present time it is probable that at least 90% of all archaeological research in South Carolina is conducted as a result of "compliance" requirements such as the federal National Historic Preservation Act or the state Coastal Zone Management Act. It seems likely that this situation will continue for the foreseeable future. Consequently, the bulk of the identification of Woodland Period sites will result from "compliance" or "contract" projects in those areas, such as along the coast, which are being rapidly developed. While it is certainly appropriate that those seeking to develop property be required to conduct such studies, this approach fails to record sites being lost to natural causes in other parts of the State. In addition, many development activities, for one reason or another, fail to come under the purview of archaeological preservation laws.

Therefore, *the first goal for identification must be the development of funding sources to ensure that a broad range of Woodland Period sites are surveyed and identified.* Traditional funding sources, such as National Park Service Survey and Planning Grants should be expanded and more adequately funded. New sources of State funding should be identified and allocated to survey

needs. One mechanism to ensure that this goal is met is to emphasize the importance of the Heritage Trust program and continue the work begun by Judge and Smith (1990). Another concern should be the development of funding, not only at appropriate levels, but which also requires less of a match than, for example, current Survey and Planning Grants. The South Carolina Department of Archives and History should take the lead in ensuring that survey programs are developed and fully funded. There is, however, a very important second aspect of this goal. The South Carolina Institute of Archaeology and Anthropology is well suited to initiate programs of survey and identification based on specific research goals. It is essential that their funding for research be expanded and that they take the lead in exploring the diversity of Woodland Period settlement often not available for examination by contract or compliance projects.

*The second goal for identification must be the development of a long-range plan which ensures that survey priorities are addressed.* There is, for example, a greater need for funded survey in the Piedmont of South Carolina than in the Coastal Zone. Not only is the Woodland Period least well understood in this area, but it also receives the least attention from "compliance" surveys. This long-range plan could best be developed by a cooperative effort between the South Carolina Department of Archives and History and the South Carolina Institute of Archaeology and Anthropology.

*The third goal for identification must be the development of survey standards to ensure that, at least in "compliance" projects, archaeological sites are being surveyed in a consistent fashion and that "small" or "ephemeral" sites are not being ignored.* Research in the coastal zone has identified sites even in "low probability" areas, such as on poorly drained soils or at distances in excess of 800 feet from water sources. Failure to identify such sites will bias our understanding of Woodland Period lifeways.

*A fourth goal for identification must be periodic funding expressly to update this Woodland Period context, revising the synthesis as new information is obtained and restating goals and priorities to meet new needs.* While this current study is clearly preliminary, it should be used to encourage new and different approaches, not allowed to become an obsolete management tool. One viable approach is for the South Carolina Department of Archives and History to sponsor annual or bi-annual symposia on Woodland Period research with adequate funding to permit at least bi-annual revision of this context.

### Evaluation

Since most Woodland Period sites are currently identified through "compliance" projects, they are typically evaluated in reference to the criteria for significance established by the

National Register of Historic Places. This study has previously discussed that either archaeological "properties" such as site integrity and clarity, or that specific research questions may be used for evaluation purposes.

Recently, Judge and Smith (1990) have developed archaeological site selection criteria for the South Carolina Heritage Trust. This system is an effort to implement quantifiable evaluation procedures. While there will certainly be discussion regarding the viability and refinement of this new technique, it offers considerable promise to ensure that South Carolina sites are protected for future generations. It must, however, be recognized that not just rare or unique sites require preservation. Rather, it is essential that a broad, representative sample of all site types must be considered.

*The first goal for evaluation should be a statement from the South Carolina Department of Archives and History that all Woodland Period site types are considered equally important.* This should not mean that a small, 500 square foot Deptford midden receives the same level of research intensity as a 50,000 square feet Deptford village. Rather, it should be an explicit statement that understanding the range of all site types is equally important to understand the totality of the settlement and subsistence patterns of the Woodland Period. Neglecting even the most seemingly insignificant site type has the potential to skew our understanding of past lifeways. Further, it should mean that while different levels of research intensity are appropriate, consistent methods and techniques should be used on all sites.

*The second goal for evaluation should be a refinement of research techniques at the survey stage.* Since it is at the survey stage that decisions are made which will result either in site preservation (through either green spacing or data recovery) or site destruction (through a finding of not eligible for inclusion on the National Register), it is essential that survey techniques be at a level appropriate to gather the necessary documentation to justify the ultimate disposition of the resource. Standards should be established for survey level research, such as how location and boundaries are documented, how the property type is identified, and how factors such as integrity and clarity are determined.

### Registration

Registration typically means incorporation of sites on the National Register of Historic Places. However, since many sites will never be nominated, this study enlarges registration to also include how the data accumulated from all sites are handled and stored.

*The first goal of registration should be the recognition that all Woodland Period site types are potentially eligible for*



*inclusion on the National Register of Historic Places. At the present time, as this document has demonstrated, there are so many questions surrounding Woodland Period settlement and subsistence that all sites types (although certainly not all sites) are capable of providing significant information. Site types should not be excluded from consideration because they are "small," "plowed," or evidence a "low density" of remains.*

*The second goal of registration should be to incorporate a greater variety of Woodland Period sites in the National Register of Historic Places. This may be achieved through both multiple property submissions (such as the current Survey and Planning Grant work by Lawrence for South Carolina shell rings) and also by individual property nominations. Review of Table 3 reveals that incredibly few of South Carolina's Woodland Period archaeological resources are receiving the limited protection offered by the National Register. In addition, the documentation suggests that the number of archaeological sites nominated to the National Register has declined dramatically over the past 10 years. This may be correlated with the increasing complexity of the National Register format and the decline in funding. The achievement of this goal, therefore, will require that the South Carolina Department of Archives and History aggressively pursue funding for National Register nominations by archaeologists in the professional community. Since green spacing is often used in compliance projects to avoid the costs associated with data recovery, it is appropriate to tie compliance green spacing to the requirement that the developer fund the completion of National Register nominations for the property. This can be achieved by the development of such a policy by the South Carolina Department of Archives and History.*

*The third goal of registration should be the creation of a state registry associated with state funding for long-term preservation. This program should be developed in a manner which provides private property owners with a clear financial incentive to ensure the preservation of archaeological sites. One such incentive might be the reduction of property taxes on archaeological sites that have been preserved according to strict standards. The Kentucky site registry program is an excellent example of such a system and should be further investigated for adoption in South Carolina.*

*The fourth goal of registration should be adequate funding for implementation of computerized site files at the South Carolina Institute of Archaeology and Anthropology and the South Carolina Department of Archives and History. With over 12,000 sites currently known for South Carolina, it is essential both for "compliance" purposes and for research that access to the information in these files is more convenient and assessable. This study has demonstrated that the files are currently of only limited use, in spite of intensive labor recently expended to improve their overall quality. If the detailed information requested by the*

current site form is to have any research value it is essential that some means of quickly accessing that data be developed. Future computerization should also strive to integrate various geographic locational data checks. Such computer programs are being developed for South Carolina and could ensure the accuracy of information provided on the site forms.

*The fifth goal of registration should be the long-term preservation of the site files at the South Carolina Institute of Archaeology and Anthropology. The current site forms, on acidic paper, have a life expectancy of 20 to 50 years. Computer records, such as disks and tapes, have life expectancies of from 5 to 20 years. A few media, such as CD-ROM and archival microfilm, may have life expectancies over 200 years (Kenworthy et al. 1985; Lesk 1990). Information which is worthy of collection is also worthy of long-term preservation. The process of transferring paper documents to more stable media is costly (about \$4000/Gbyte for transfer to magnetic disk, \$2000/Gbyte to CD-ROM and approximately \$600/Gbyte for transfer to microfilm [at a cost of 15¢ per page]). There are also costs associated with adequate archival storage of the records.*

*The sixth goal of registration should be the creation and maintenance of a list of sites determined by the State Historic Preservation Officer (SHPO) to be eligible for inclusion in the National Register of Historic Places. The list should be maintained by the South Carolina Department of Archives and History, since that agency makes the eligibility determinations, but should be cross-indexed with the State site files maintained by the South Carolina Institute of Archaeology and Anthropology. Such a list could serve a valuable management tool to reduce redundancy and indicate site types requiring further investigation. Those sites on the list which have been green spaced could also serve as the basis for a state registry system, discussed above. The list, however, will require that SHPO correspondence for the past 20 years be reviewed. It will also be necessary to field check these sites to determine their current condition. This job may best be performed by an outside consultant.*

#### Treatment Options

The traditional treatments of archaeological properties include basically two alternatives, long-term preservation through techniques such as green spacing or data recovery through excavation. Treatments, however, may also include activities such as survey and preparation of National Register nominations, as previously discussed. The recent work by the South Carolina Heritage Trust offers another form of treatment, with the State purchasing archaeological properties for long-term management. However, as one reviewer pointed out, ownership without a responsible, funded, management program will do little to ensure preservation. Funding must be allocated not only for purchase, but

also for a variety of protection and preservation options.

*The first goal of treatment should be the development of consistent data recovery requirements by the South Carolina Department of Archives and History for "compliance" work at Woodland Period sites. These requirements should not stifle creativity, but should establish minimal field and analytical techniques to ensure that significant archaeological data are not lost. One reviewer has cautioned that the current federal regulations (36CFR66) have established standards for data recovery. While this is true, states traditionally have had the option to establish standards in excess of those established by the federal government.*

*The second goal of treatment is to emphasize and encourage the collection of archaeological data from the less well known aspects of the Woodland Period, such as Piedmont sites and Late Woodland Coastal Zone sites. This may be accomplished, as previously discussed, by increased funding of both survey and data recovery projects.*

*The third goal of treatment, related to the first, should be the development of uniform requirements for green spacing by the South Carolina Department of Archives of History. Such requirements might not only include specific provisions regarding ground disturbing activities, but also a requirement that a National Register nomination be funded for any green spaced site. Currently the South Carolina Department of Archives and History is unable to ensure that green spacing provisions are appropriately carried out and that green spaced sites are not later impacted by development. Provisions should be established to periodically re-examine green spaced sites. Green spacing might be profitably incorporated with a state registry system.*

*The fourth goal of treatment should be to expand professional knowledge of protection and preservation options. Recent work by the Corps of Engineers Waterways Experiment Station (Whalin 1989) has demonstrated not only the variety of options available, but also the need for additional study of existing options. The South Carolina Department of Archives and History should become more active in this research process, experimenting with different techniques and disseminating the results of the work. There are many types of Woodland Period sites, such as eroding shell middens, plowed sites, vandalized villages, and sites subject to development impacts, which provide an unlimited laboratory for this work.*

*The fifth goal of treatment should be to encourage public participation in archaeology and to disseminate the results of Woodland Period research to the public. This goal should include publication of more brochures on the archaeology of South Carolina, public (rather than just professional or avocational) presentations on archaeology, encouraging the integration of archaeology into*

school curricula, and development of an active campaign aimed at developers to encourage archaeological preservation.

*The sixth goal of treatment should be to encourage the South Carolina Department of Parks, Recreation, and Tourism to actively incorporate archaeological sites into the park system. The only primarily archaeological parks currently held by South Carolina are those at Fort Watson (a South Appalachian Mississippian temple mound), Charles Towne Landing (a historic site), and Fort Dorchester (a historic site). The State of North Carolina has an active program to acquire, promote, and interpret historic and archaeological sites at both a state and local level. A similar program should be instituted in South Carolina.*

*The seventh goal for evaluation should be an intensive effort to educate the public about the importance of Woodland Period sites. Both the future and success of archaeology depends on the public's appreciation of archaeological techniques and goals. One reviewer commented, "I have come to feel more and more that what we do must be of some recognizable benefit to the people who pay us to do it." Not only does the public pay for the vast majority of archaeological research, but public opinion can be a powerful tool for ensuring the preservation of significant archaeological sites. This process of education should be jointly sponsored by the South Carolina Department of Archives and History and the South Carolina Institute of Archaeology and Anthropology. Both agencies have already instituted strong programs of public education, but they can be improved and better funded. This program should emphasize what is currently known about the Woodland Period sites, why these sites are important, and how they may be protected.*

Education, however, requires that the professional community fulfill its obligations inherent in compliance or "public" archaeology. If this work is truly in the public interest, then it is also in the public interest to ensure the dissemination of the results. Too few archaeological reports are made available to the public. The South Carolina Department of Archives and History should require that all compliance reports are not only filed with that agency and the South Carolina Institute of Archaeology and Anthropology, but also are routinely filed with the South Carolina State Library, regional libraries and university repositories, and local public libraries. One reviewer has noted that public access to reports of archaeological studies has the potential to endanger the resources and that the public reports should not include explicit locational data. This is an appropriate concern.

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APPENDIX 1.  
WOODLAND PERIOD POTTERY CLASSIFICATION

Badin Series (1000 B.C. - 400 B.C.; Early Woodland)

The Badin Series consists of hard, compact pottery with a fine sandy texture. The typical vessel form is a simple, straight-sided jar with a conical base (Coe 1964). This is the earliest pottery found in the southern North Carolina Piedmont, although it is rarely reported from South Carolina. Recognizable types include Badin Plain, Badin Cord Marked, Badin Fabric Marked, and Badin Net Impressed.

Cartersville Series (200 B.C. - A.D. 500; Early - Middle Woodland)

As originally typed, the Cartersville Series is characterized by sand or grit paste with surface treatments of primarily cord marking. Vessels are typically plain from the shoulder to the rim and tetrapodal supports are found. The Cartersville Series is thought to be closely related to the coastal Deptford Series (Anderson and Schuldenrein 1985:342-345; Caldwell 1958; Smith 1972; Wauchope 1966). Recognized types include Cartersville Cord Marked, Cartersville Check Stamped, Cartersville Simple Stamped.

Connestee Series (A.D. 200 - A.D. 600; Middle Woodland)

The Connestee Series is characterized by thin-walled, sand tempered wares with surface treatments typically brushed or simple stamped. Occasional surface treatments of cord marking, fabric impressing, check stamping, and complicated stamping are also found. Vessel forms include conoidal and hemispherical vessels with constricted necks and flaring rims (Keel 1976). The pottery is probably similar to the Candy Creek wares of Tennessee and the Swift Creek wares of Georgia. Recognized types include Connestee Plain, Connestee Brushed, Connestee Cord Marked, Connestee Simple Stamped, Connestee Check Stamped, and Connestee Fabric Impressed.

Deep Creek Series (800 B.C. - A.D. 200; Early - Middle Woodland)

The Deep Creek Series is characterized by paste inclusions from the size of fine to course sand and occasional large particles of quartz. Surface treatments are primarily cord marking and fabric impressing. The Deep Creek Series appears to be closely related to the Deptford wares (Phelps 1983; Trinkley 1987). Recognized types include: Deep Creek Plain, Deep Creek Cord Marked; Deep Creek Fabric Impressed; Deep Creek Simple Stamped; Deep Creek Net Impressed.

Deptford Series (800 B.C. - A.D. 500; Early - Middle Woodland)

The Deptford Series is characterized by a fine to course sandy paste. Surface treatments are typically check stamped or cord marked. The most common vessel form in South Carolina is a cylindrical vessel with a conoidal base (DePratter 1979; Griffin 1945; Williams 1968). Recognized types include: Deptford Plain, Deptford Check Stamped; Deptford Simple Stamped; Deptford Cord Marked; Deptford Geometric Stamped [Oemler Complicated Stamped]; Deptford Complicated Stamped [Swift Creek?].

Dunlap Series (1000 B.C. - 300 B.C.; Early Woodland)

Dunlap is characterized by a medium to coarse sand paste, fabric impressions, and vessels with a simple jar or cup form. The fabric has demonstrated considerable variability, ranging from very fine to sufficient coarse to be termed "cord wrapped dowel" (Jennings and Fairbanks 1939; Sears and Griffin 1950a). The only recognized type is Dunlap Fabric Marked.

Mossy Oak Series (see Deptford)

As originally typed, the Mossy Oak pottery consisted of a sand or grit tempered ware characterized by simple stamping. The typical vessel form was a cylindrical jar with slight shoulders. Other researchers have found this ware associated with Deptford and have combined the two (Griffin and Sears 1950; Wauchope 1966). The only recognized type is Mossy Oak Simple Stamped.

Mount Pleasant Series (A.D. 200 - A.D. 900; Middle Woodland)

The Mount Pleasant Series is most frequently characterized by a sandy paste with quantities of pebble (or "grit") inclusions. The paste, however, is quite variable and a significant percentage of the series has a fine sandy paste with few or no inclusions. Surface treatments include fabric impressed, cord marked, net impressed, and plain. Incising is minor form of decoration, primarily on plain wares. Vessels are usually conoidal, although a few hemispherical or globular pots and bowls are found (Phelps 1983). Recognized types include Mount Pleasant Plain, Mount Pleasant Cord Marked, Mount Pleasant Fabric Impressed, Mount Pleasant Net Impressed.

Napier Series (A.D. 600 - A.D. 1000; Late Woodland)

The Napier Series is characterized by fine sand tempered wares with fine complicated stamped designs. Vessel forms are deep beaker shapes with straight to slightly flaring sides, globular jars and bowls with incurving lips, and straight sided bowls (Wauchope 1966; see also the discussions by Anderson and Joseph 1988:245-247). The only recognized type is Napier Complicated Stamped.

Pigeon Series (300 B.C. - A.D. 100; Early Woodland)

The Pigeon Series is characterized by quartz tempering with surface treatments including check stamping, simple stamping, and brushing. Vessel forms are primarily conical jars and open hemispherical bowls. Decoration is limited to occasional notched or paddle-marked lips (Keel 1976). Recognized types include: Pigeon Plain, Pigeon Check Stamped, Pigeon Simple Stamped, Pigeon Brushed, and Pigeon Complicated Stamped.

Refuge Series (1000 B.C. - 600 B.C.; Early Woodland)

This series is characterized by a compact, sandy or gritty paste and a sloppy simple stamped, dentate stamped, or random punctated decoration. Both hemispherical bowls and large, deep bowls are found, as well as a few flat-bottomed vessels with tetrapodal supports (DePratter 1979; Lepionka et al. 1983; Peterson 1971; Trinkley 1982; Williams 1968). Recognized types include: Refuge Random Punctate, Refuge Simple Stamped, and Refuge Dentate Stamped (see, however, the typological discussions by Anderson et al. 1982:264-270).

Santee/McClellanville Series (A.D. 500 - A.D. 1300; Middle-Late Woodland)

The Santee Series is represented by sandy paste, primarily simple stamped surface treatment pottery with straight to excurvate rims. This ware is documented by Anderson et al. (1982) to date from the Late Woodland. A similar, although perhaps distinct, ware is the McClellanville Series, which is characterized by sandy paste, simple stamping, and straight rims. This series has been suggested to date from the late Middle Woodland (Trinkley 1981a). Also related to these two series is the Camden Series, defined by Stuart (1975). Surface treatments may include plain, simple stamped, fabric impressed, and cord marked.

Stallings Series (2500 B.C. - 1000 B.C.; Early Woodland)

Stallings may be recognized by the occurrence of fiber tracks, the result of Spanish Moss added to the paste which has oxidized during the firing process. Characteristic of this series is the general absence of obvious coil fractures. Decoration consists of a variety of punctuation modes, incising, simple stamping, and finger pinching (Bullen and Greene 1970; Claflin 1931; DePratter 1979; Fairbanks 1942; Griffin 1943; Sears and Griffin 1950b; Williams 1968). Recognized types include: Stallings Plain, Stallings Punctate, Stallings Incised, Stallings Simple Stamped, and Stallings Finger Pinched.

St. Catherines Series (A.D. 1000 - A.D. 1200; Late Woodland)

The St. Catherines Series is characterized by finely crushed

sherds, or more commonly, low-fired clay fragments. Typical vessels are cylindrical jars with straight sides and occasionally flaring rims. Surface treatment is primarily cord marked (Caldwell 1971; DePratter 1979). Recognized types include: St. Catherines Plain, St. Catherines Cord Marked, and St. Catherines Net Impressed. Also present may be St. Catherines Fabric Impressed.

Swannanoa Series (600 B.C. - 200 B.C.; Early Woodland)

The Swannanoa Series is characterized by heavy crushed quartz tempering and conoidal jars or hemispherical bowls. Surface treatment is typically cord marked or fabric impressed (Keel 1976). Recognized types include Swannanoa Plain, Swannanoa Cord Marked, Swannanoa Fabric Impressed, Swannanoa Simple Stamped, and Swannanoa Check Stamped.

Swift Creek Series (A.D. 300 - A.D. 600; Middle Woodland)

The Swift Creek Series is a sand tempered ware characterized by conoidal jars with flat bases, occasionally with tetrapodal supports, and deep bowls with slightly rounded sides. Surface treatments include well executed and applied bold curvilinear and rectilinear designs (Anderson and Joseph 1988:230-231; Jennings and Fairbanks 1939; Wauchope 1966). The only recognized type is Swift Creek Complicated Stamped.

Thom's Creek Series (1800 B.C. - 900 B.C.; Early Woodland)

Thom's Creek consists of sandy paste pottery decorated with the motifs common to the Stallings Series, most characteristically various punctations, simple stamping, and finger pinching. Like the Stallings Series, this pottery is fairly simple, possesses three vessel forms, and simple lip treatments. Unlike the Stallings pottery, coil fractures are common in the Thom's Creek Series (Griffin 1945; Phelps 1968; Trinkley 1980b). Recognized types include: Thom's Creek Plain, Thom's Creek Reed Punctate, Thom's Creek Shell Punctate, Thom's Creek Finger Pinched, Thom's Creek Incised, Thom's Creek Simple Stamped, and Thom's Creek Finger Smoothed.

Wilmington/Hanover Series (A.D. 500 - A.D. 1000; Middle Woodland)

The Hanover and Wilmington Series are characterized almost solely by their sherd temper which may make up 30% to 40% of the paste and may range in size from 3 to 10 mm. Hanover and Wilmington appear to be regional variations (with Hanover found into North Carolina and Wilmington found into Georgia) of the same basic ware. Surface treatments are varied, although cord marking is the most common (Anderson et al. 1982:271-276; DePratter 1979; South 1960; Williams 1968). Recognized types include Hanover/Wilmington Plain, Hanover/Wilmington Cord Marked, and Hanover/Wilmington Fabric Impressed. However, check stamped, simple stamped, and occasionally

complicated stamped examples are also found.

Yadkin Series (300 B.C. - A.D. 400; Middle Woodland)

The Yadkin Series is characterized by heavy crushed quartz temper and cord marked or fabric impressed surface treatments. Vessel form is usually hemispherical or semi-conoidal with straight rims (Coe 1964). This ware is found both in the upper Coastal Plain and Piedmont of South Carolina. Recognized types include: Yadkin Plain, Yadkin Cord Marked, and Yadkin Fabric Impressed.

APPENDIX 2.  
WOODLAND PERIOD PROJECTILE POINT CLASSIFICATION

One researcher has suggested that the use of traditional projectile point types, especially the various triangular types, may be an exercise in futility (see Sassaman et al. 1989). Certainly the collection and use of metric data is an appropriate avenue to explore. What is needed is a detailed re-evaluation of these projectile point types and their applicability in South Carolina. While numerous typological studies of Woodland Period pottery have been conducted over the past decade, very few efforts have been directed toward refining the lithic typology offered almost 30 years ago by Coe (1964). Until researchers begin to intensively explore projectile point typology, the existing classification is offered.

Badin Triangular (Early Woodland)

The Badin Triangular point is a large, crudely made point evidencing only percussion flaking (Coe 1964). Additional research, however, may reveal this point to be a Yadkin preform.

Gypsy Stemmed (Early Woodland)

The Gypsy Stemmed type is a small point with a triangular blade and a square or rectangular straight stem, and a straight, incurvate, or excurvate base (Oliver 1981).

Roanoke Large Triangular (Early - Middle Woodland)

The Roanoke Large Triangular is a large, triangular point with slightly concave sides and base (Coe 1964).

Savannah River Stemmed (Late Archaic - Early Woodland)

The Savannah River Stemmed is a large point with a broad, triangular blade, a straight or slightly contracting stem, and a base which may be straight, incurvate, or excurvate (Coe 1964; Oliver 1981).

Small Savannah River Stemmed (Early Woodland)

The Small Savannah River Stemmed is a linear descendant of the earlier Savannah River Stemmed type and is typically a small to medium sized point with a broad triangular blade, a rectangular stem, and base which may be straight, incurvate, or excurvate (Oliver 1981).



Swannanoa Stemmed (Early Woodland)

The Swannanoa is "a small, thick, triangular-bladed point with a relatively long stem" (Keel 1976).

Uwharrie Triangular (Late Woodland)

The Uwharrie Triangular type is a medium-sized, narrow, isosceles triangular point (Coe 1964).

Yadkin Large Triangular (Middle Woodland)

The Yadkin Large Triangular point is, as the name implies, a large, well-made, triangular point with a concave base and straight sides. In the Piedmont of North Carolina it is typically made from fine-grained nonporphyritic materials (Coe 1964).