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## **WOODLAND PERIOD SITE DISTRIBUTION AND LANDSCAPE USE IN THE COASTAL PLAIN OF SOUTHEASTERN NORTH CAROLINA**

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This article presents a review of past and current Woodland period research in the New River estuary of southeastern North Carolina. It is largely concerned with the distribution of various ceramic wares present in this area in order to offer information and interpretations for locations of Woodland period occupations. This assessment of the distribution of Woodland period pottery series present in the New River estuary relies exclusively on work conducted through an ambitious 10-year program to inventory cultural resources on Camp Lejeune. Differences in the spatial distribution of Woodland period components within the study area provide a basis for comparing Woodland occupations in the interior drainages with those on larger tributaries of the estuary.

Camp Lejeune is located in Onslow County in southeastern North Carolina (Figure 5-1). Onslow County encompasses an area of 820 square miles and is bounded by the Atlantic Ocean to the south, by Pender and Duplin counties to the west, by the White Oak River and Jones County to the north, and by the White Oak River and Carteret County to the east. Combined, the base is approximately 142,866 acres in size and occupies more than one-fourth of the county.

The New River estuary and its primary tributaries, Northeast Creek, Southwest Creek, Wallace Creek, and French Creek, drain Camp Lejeune (Figure 5-2). The New River estuary is more than a shallow wetland that marks the transition of freshwater to saltwater; but rather its brackish waters serve as a vital habitat for diverse marine life. Topographically, a number of permanent and intermittent streams that are often surrounded by extensive linear swamps dissect the Base. Expansive marshes, swamps, bogs, and pocosins are found in the area, particularly along the shores of estuarine areas. In general, relief on the Base varies from level or nearly level to gently rolling, and land surfaces range from sea level to 94 feet AMSL (0-29 m) in elevation. Generally, elevation increases as one moves toward the interior on the west side of the New River. A second area of higher landforms represent a series of relict sand dunes that stretch in a northeast trending arc from Mile Hammock Bay toward the headwaters of Mill Creek.

Sounds and estuaries of major rivers, including the New River, White Oak, and Cape Fear rivers are located behind the barrier islands that line the coastal region of southeastern North Carolina. Many small drainages and tributaries are also located along the coast and drain directly into tidal marshes, bays, and the Intracoastal Waterway. Landforms and streams located up to three miles inland are affected by tidal fluctuations.

Sea level rise during the Holocene period and subsequent flooding of estuaries and other lowlands in Onslow County, have had a significant impact on settlement patterns throughout the prehistoric and historic periods of the region. The influences of these environmental changes are reflected in the frequencies and distribution of archaeological components in the region and suggest concomitant changes in human adaptations during the Holocene period.

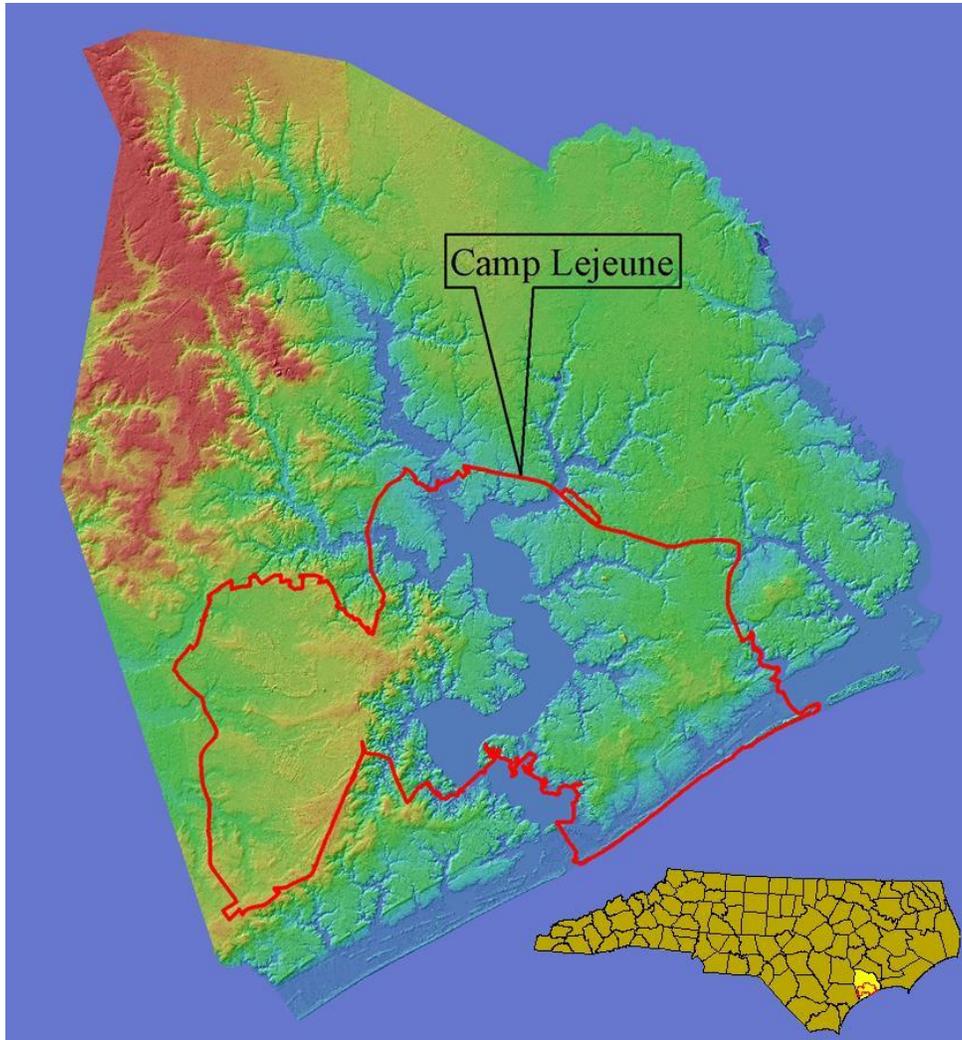


Figure 5-1. Location of study area within Onslow County.

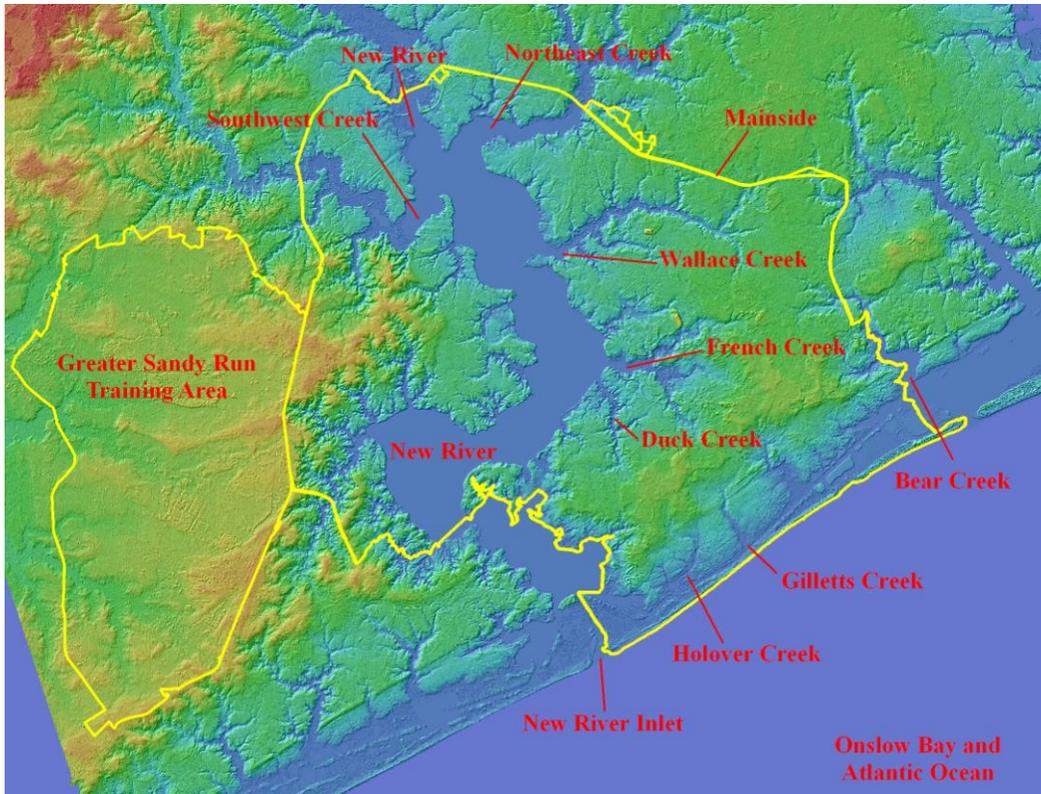


Figure 5-2. Major drainages of Camp Lejeune.

## PREVIOUS RESEARCH

Archaeological survey at Camp Lejeune started in the mid 1960s when researchers associated with the University of North Carolina at Chapel Hill recorded some of the earliest sites registered in the county (Loftfield 1981:4). Loftfield (1976) conducted the earliest and most comprehensive investigations of Camp Lejeune in the early 1970s as part of his dissertation research at UNC. In the early part of the 1980s, Loftfield continued extensive investigations of Camp Lejeune. The purpose of these investigations was primarily to conduct a reconnaissance survey of a representative sample of the Base in order to help predict site locations across the landscape. The Base was stratified based on biotic communities, and site frequencies were studied relative to topography, water, and biota in order to generate a model of the environmental and cultural factors that determine site location. As a result, Loftfield (1976, 1981) was among the first to observe within Camp Lejeune the positioning of prehistoric sites and their association with soil types, specific types of water sources, landform elevation, elevation of water sources, and proximity to water, particularly during the Middle Woodland and Late Woodland periods.

His observations concerning distance to water, topography, and changes in site elevation led him to formulate one of the first settlement pattern models for prehistoric occupation of Onslow County, and Camp Lejeune in particular. First, he noted that prehistoric sites are associated with fresh water or salt water and are within 100 m of a water source (Loftfield 1976, 1981). Second, he observed that Archaic and Early Woodland sites tend to occur on elevated landforms adjacent to a water source. Third, he found that site selection during Middle

Woodland and Late Woodland periods was focused on aquatic resources and salt water environs at lower elevations, especially floodplains or flat lands adjacent to saltwater.

While Loftfield (1976, 1981) was among the first to conduct archaeological investigation on Camp Lejeune, investigations continued throughout the 1980s and early 1990s by other researchers. Identification of sites during surveys conducted during this time have allowed for the formulation of three generalized regional models of site placement on Camp Lejeune: flat pattern, ridge pattern, and site-soil models. The flat pattern model was formulated by Loftfield (1981, 1988) and proposes that the preferred Late Woodland site locations are situated next to, or within a relatively short distance of, salt water and were more likely to occur on landforms 10 feet in elevation above sea level. Loftfield speculated that arable land found on flat terraces was occupied primarily for agricultural purposes, with estuarine settings providing access to aquatic resources during times of agricultural stress.

The ridge pattern model of site placement proposed by Gunn and Espenshade (1990) is focused primarily on Early Woodland and Middle Woodland site locations. The proposed settlement pattern for these two periods is marked by a tendency for sites to be located on toe ridges bordered by wetlands on two or three sides. Presumably, this provided access to resources along stream drainages or interior wetlands, as well as upland or upland margin resources. This pattern would suggest hunting based broad-spectrum resource orientation that utilized both interior wetland resources and upland or upland margin resources like deer and turkey. The ridge pattern model does not appear to represent the entire Early Woodland settlement pattern, however, as Loftfield (1981) found that Early Woodland sites occur at all elevations.

The site-soil model proposed by Poplin and Jones (1992) is based on the assumption that archaeological sites are correlated with edaphic factors within specific environmental settings. Prior to their research, soil properties had been previously demonstrated as good predictors for archaeological site distribution elsewhere in the North Carolina Coastal Plain, particularly with the extensive work of Wilde-Ramsing (1980, 1981) and Hay et al. (1982) in New Hanover County. Poplin and Jones (1992) stratified Camp Lejeune based on soil series and found that the highest density of archaeological sites, based on the frequency of sites and the total number of acres surveyed, occurred on nine different soil series, which were later incorporated into a formal predictive model used by Camp Lejeune.

They noted that site locations within Camp Lejeune were clearly patterned by soil types, particularly for Early Woodland and Middle Woodland components (Poplin and Jones 1992:56–57). Similarly, Claassen (1979a, 1979b) found a high correlation of Late Woodland sites with specific soils (Onslow series) during her survey along the White Oak River, between Onslow and Carteret counties, while Loftfield (1981, 1988) observed that Late Woodland sites on Camp Lejeune frequently occurred on one specific soil series (Wando soils). However, later research conducted by Poplin and Jones (1992:54) on Camp Lejeune found that Late Woodland sites do not appear to have similar frequencies for Onslow and Wando soils. When they explored Wando soils in the inland portions of the Base, these researchers found no Late Woodland sites, and suggested that the association of Late Woodland sites with the Wando series may be affected by distance from the Atlantic shore.

Other than Onslow County, research conducted elsewhere in the southern and northern Coastal Plain of North Carolina also indicates that elevated landform, well-drained soil, and proximity to water, or more importantly stream confluences, are the main criteria for site selection (Claassen 1979b; Hay et al. 1982; Loftfield 1976, 1981; Phelps 1983; Poplin and Jones 1992; Wilde-Ramsing 1980, 1981). Lautzenheiser (1989) later refined this model of prehistoric

settlement for the Inner Coastal Plain to include sites located on the rims of Carolina Bays, as well as fringes of swamps, or other micro-relief landforms associated with rivers, streams, or bays since these types of water sources were crucial and reliable sources of plant and animal resources.

Claassen (1979b:37) has observed that archaeological sites are predominantly located on elevated ground, and in most cases, situated either on top of a narrow ridge or along bluffs overlooking large streams. Farther north along the Chowan River, Phelps (1978:32) has also noted a similar tendency for sites to be located in elevated areas. Phelps (1983) also observed that archaeological sites within the Coastal Plain tend to occur in proximity to water. Investigations conducted in the region by Phelps and other researchers indicate that the largest settlements occurred along the major river systems, with a noticeable reduction of sites, particularly Late Archaic period sites, along the smaller tributary streams (Phelps 1983). Mathis (1979) further indicates that larger, more permanent habitation sites are likely to occur at the confluence of a high order stream and a smaller tributary.

## METHODOLOGY

The fluorescence of prehistoric occupations in the Coastal Plain occurred during the Woodland period. Cultural chronologies have traditionally ascribed a tripartite division of the Woodland period into the Early, Middle, and Late Woodland subperiods. Large suites of radiometric and thermoluminescence (TL) dates obtained over the last 10–15 years have helped to refine the chronological sequence of the different Woodland ceramic series present in the Coastal Plain. Given our current understanding, these new data have demonstrated greater temporal variability of the various pottery traditions, and it now appears evident that some of the Woodland ceramic series are associated with multiple temporal periods (see Herbert this volume).

Of the nearly 1,300 prehistoric and historic sites identified on the Base, only 13 sites have yielded absolute dates in the form of radiocarbon or TL dates (cf. Davis and Childs 1996; Greene and Millis 2003; Loftfield and McCall 1986; Millis 2009a, 2009b, 2009c; Norris and Abbott 2004; Reid and Simpson 1997). Due to the low frequency of absolute dates, it becomes important to view temporal distribution data based on typologically distinct ceramic series. This is particularly crucial considering that occupations associated with various Woodland ceramic traditions cannot necessarily be defined by a single temporal period, but rather it now appears more likely that duration span for some of the ware groups transcends multiple Woodland periods. Due to these considerations, and since there is more regional and cultural variability than is present in current models of pottery type distribution, cultural data and the spatial distribution of archaeological resources used for this study were based on components assigned by ceramic artifacts considered to be diagnostic of specific ceramic ware groups. One caveat about site distribution patterns, however, is that not all sites contain temporally diagnostic ceramic assemblages. Therefore, isolated find locations or small sites without diagnostic artifacts may prove later to be important components of the relationship of pottery type distribution and settlement organization. Moreover, there is no expectation that any of the pottery types correspond to a specific ethnic or linguistic group. While it is possible that some ceramic traditions, such as the Colington and White Oak series, may be correlated with distinct cultural groups, it is just as likely that a cultural group was associated with more than one pottery series.

Camp Lejeune is divided into two different portions: Mainside and Greater Sandy Run Training Area (GSRA). Since 1998, TRC has conducted survey investigations of more than

14,400 acres within the Mainside portion of the Base (Figure 5-3). Of the nearly 1,300 prehistoric and historic sites recorded on Camp Lejeune, more than 1,060 of these sites were recorded or relocated during our investigations (Figure 5-4). While Archaic period occupations are represented on the Base, for the purpose of this study, only sites containing Woodland components will be discussed. Although sites are located on GSRA, only Woodland components identified within the Mainside portion of the base will be discussed.

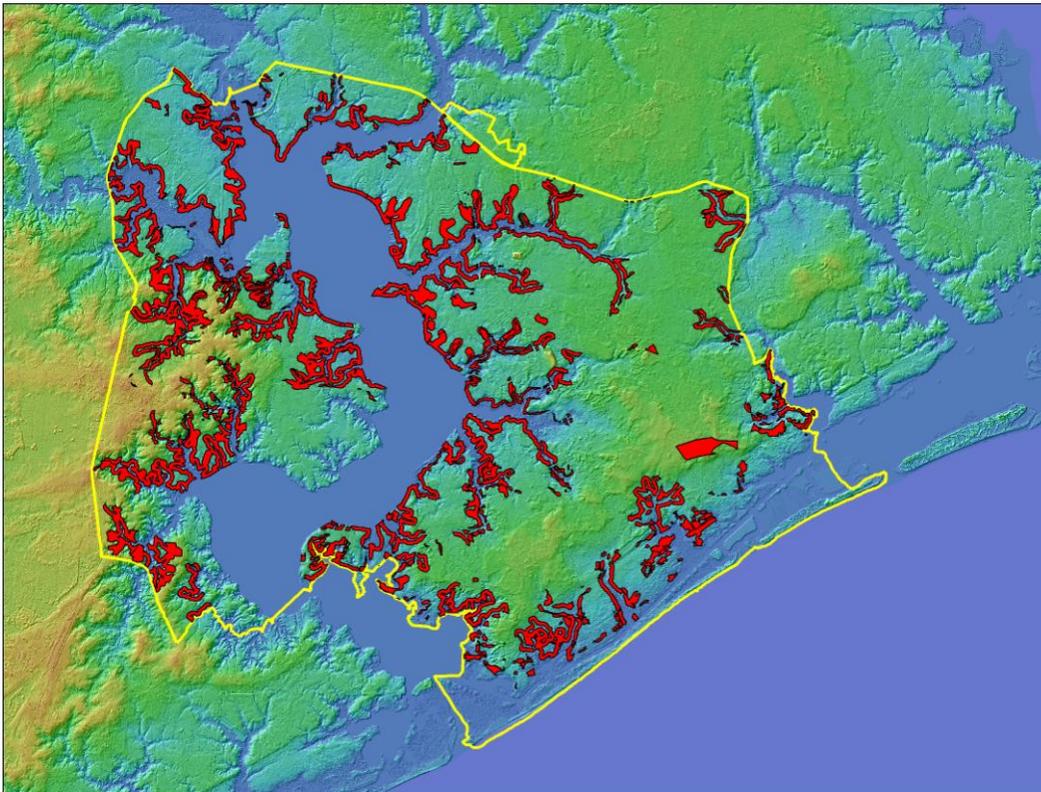


Figure 5-3. TRC survey areas 1998–2008.

In order to assess the spatial distribution of Woodland components in the New River drainage, almost 28,000 sherds representing more than 1,900 diagnostic assemblages from 782 prehistoric sites were analyzed (Figure 5-5). Distribution patterns at Camp Lejeune were discerned by characterizing differences in the spatial, chronological, and cultural distinction of ceramic series across the landscape. Once the known resources were identified for each ceramic tradition, their frequency and location were evaluated. While these observations must be treated as measures of basic tendencies, generalizations about where, and to what extent, particular types of Woodland period resources are located will serve to define potential areas that need attention and to illustrate particular patterns of prehistoric settlement with regard to socio-cultural boundaries as illustrated by the distribution of temporally separate and/or coeval ceramic traditions.

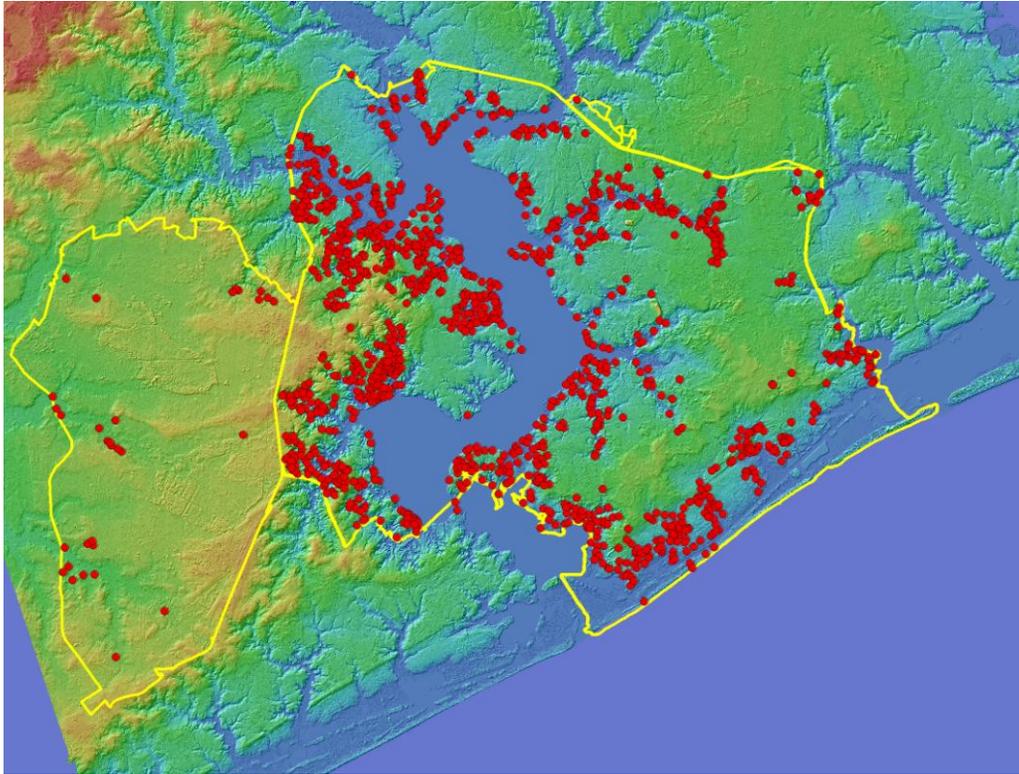


Figure 5-4. Camp Lejeune site distribution.

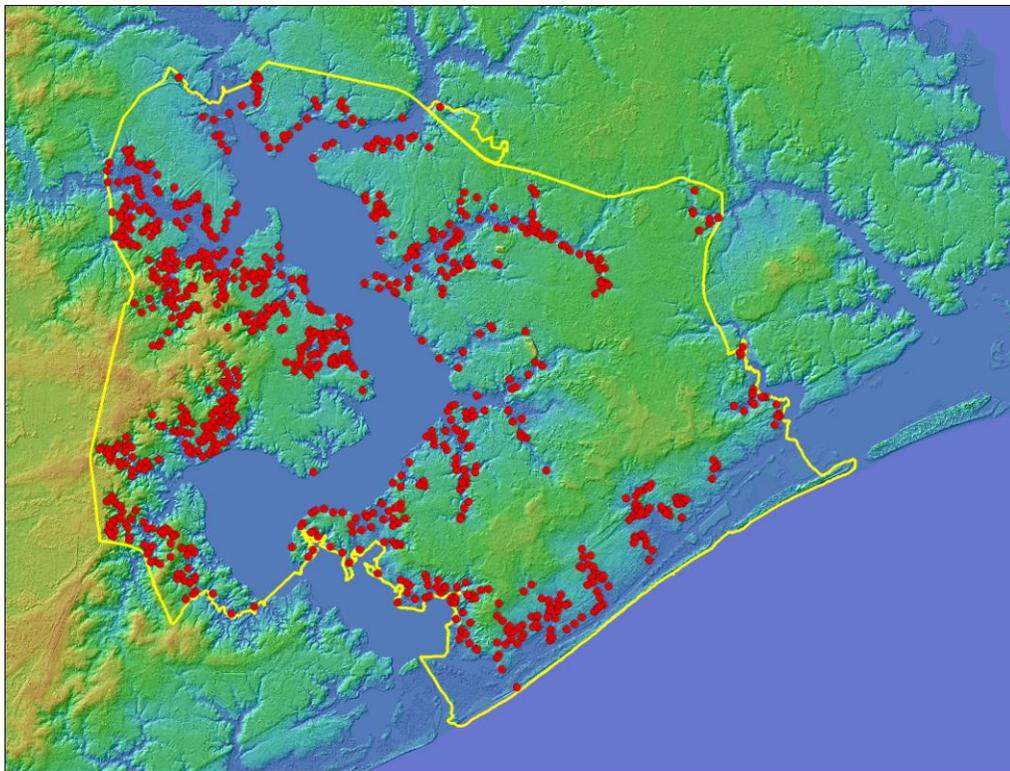


Figure 5-5. Prehistoric sites located on Mainside.

Many of the sites utilized for this study are multi-component, suggesting extensive use and reuse during site occupancy. They also demonstrate considerable temporal duration, often producing diagnostic sherds representative of ceramic series ranging from Early Woodland Thom's Creek through Late Woodland White Oak ceramic traditions, with some of the occupations by groups making pottery associated with the New River, Cape Fear, Hanover, and White Oak ceramic series particularly intensive.

### SPATIAL DISTRIBUTION OF CERAMIC SERIES

Chronology and models of Woodland period settlements in the Coastal Plain have been developed by Phelps (1983) for the northern Coastal Plain and by Loftfield (1976) and South (1976) for the southern Coastal Plain. Since the study area is located in the south coastal region, only a review of Woodland prehistory in this region is pertinent.

Based on diagnostic ceramic artifacts represented within the project areas included in this study, components with Stallings and Thom's Creek series pottery were sparse, but an increase in the spatial distribution of Hamp's Landing and New River series pottery elsewhere in the New River drainage during the Early Woodland period is evident (Figure 5-6). The New River watershed was intensely occupied by groups making Cape Fear and Hanover series pottery, considering the marked increase in the number of prehistoric sites that contain these components identified in the study area. In general, sites with Deptford, Onslow, and White Oak components decreased in frequency across the Base during the Middle Woodland and through the end of the Late Woodland period. Mockley, Brunswick, and Swansboro components were rarely encountered on the Base. A more thorough discussion of the spatial distribution of these various ceramic traditions follows.

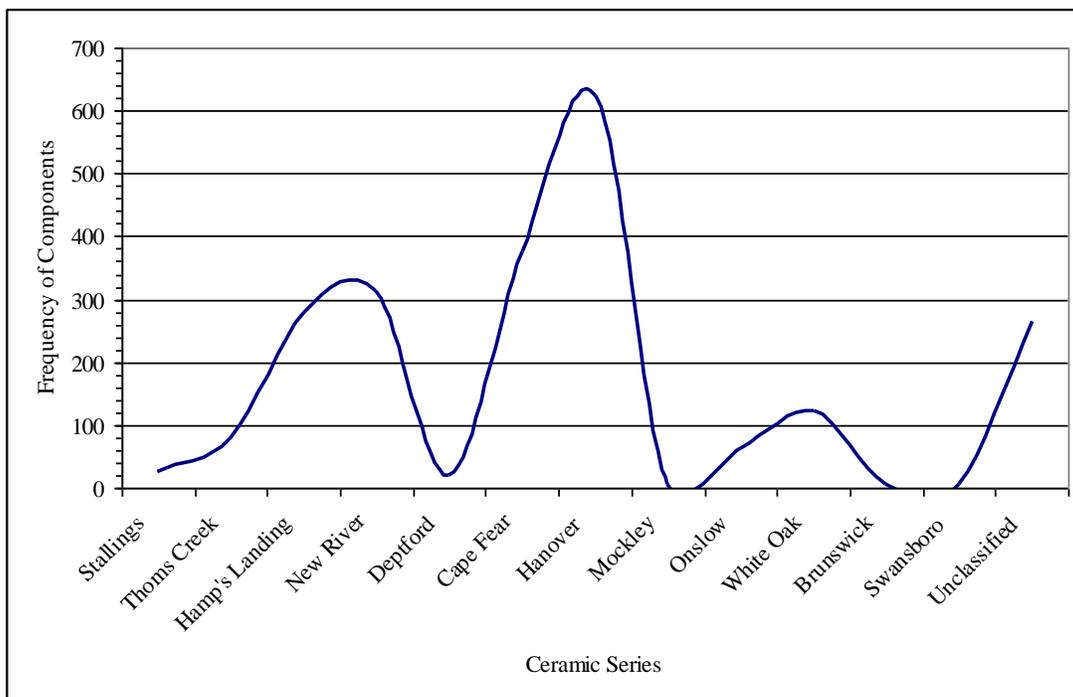


Figure 5-6. Distribution of Woodland components in the New River drainage.

### *Early Woodland (1,000 B.C.–A.D. 300)*

The Early Woodland period in the south coastal region is characterized by the Stallings, Thom's Creek, Hamp's Landing, and New River ceramic series. Little is known about the settlement practices during the Early Woodland period, but Phelps (1983:32) has suggested that the lifeways of these peoples seem to have changed little from those of their Late Archaic predecessors. The frequency of sites attributed to the Early Woodland period shows an increase over the preceding Late Archaic period (Claassen 1979b; South 1976). Claassen (1979b:49) has attributed the increase in sites during this time to normal population growth. Alternatively, it is possible that the increase in frequency of Early Woodland sites is due to greater movements across the landscape as a result of a more mobile settlement pattern, thus accounting for greater archaeological visibility for sites assigned to this period. Since lithic artifacts, particularly temporally diagnostic lithic artifacts, do not occur in large quantities at either Archaic or Woodland period sites within the study area, it is also probable that the introduction of pottery during this time has resulted in a more conclusive identification of components associated with the Early Woodland period.

Research has found that Early Woodland sites tend to be located on relatively few specific soil types, following a pattern established during the Late Archaic period, with sites during this period apparently focused on salt water or estuarine margins (Claassen 1979b:43, 47). In contrast, Loftfield (1981:137) found that Early Woodland sites on Camp Lejeune have a tendency to be located more inland than later Woodland period sites, which generally occur in estuarine settings. Research conducted by Poplin and Jones (1992) at Camp Lejeune indicate that Early Woodland sites were scattered in upland settings or on terrace slopes adjacent to drainages and were generally located on sandy soils. Gunn and Espenshade (1990:92) also noted that Early Woodland and Middle Woodland sites tend to occur at higher elevations than Late Woodland and historic sites and suggested that these changes in site placement are likely the result of changes in sea level and local climate.

The Stallings series, characterized by fiber temper and plain or smooth surfaces with punctate decorations, was manufactured around 2500 to 1100 B.C. in North Carolina. Current knowledge of the Stallings tradition is limited, but sherds have been reported from a small number of sites in the Coastal Plain. The majority of these are south of the Neuse River drainage, however, fiber tempered sherds are found as far north as the Chowan River in Gates County (Herbert 2003; Phelps 1983). Stallings series sherds were found at 27 sites during our study at Camp Lejeune, most of which occurred in the northwestern portion of the Base around Southwest Creek and the lower part of the New River, near the inlet and along the southeastern portion of the coast (Figure 5-7). Sites with Stallings components are generally found along primary or secondary tributaries of the New River, but a few sites are located in inland settings. Thom's Creek series pottery has an expected manufacture range of 2000–1000 B.C. and is a minority pottery type in the Coastal Plain region. It can be found as far north as the Neuse River drainage, and its occasional presence along the southern coast of North Carolina suggests a northern migration of this ware (Phelps 1968, 1983; Trinkley 1976, 1980, 1989). Thom's Creek pottery was found in relatively small amounts at 79 sites across the Base (see Figure 5-6). A majority of the sites with Thom's Creek components were also occupied by groups associated with Hamp's Landing, New River, Cape Fear, Hanover, and White Oak wares. Areas of particular concentration for sites containing Thom's Creek components occur within the northwestern portion of the Base, in the Southwest Creek drainage; in the Town Creek drainage,

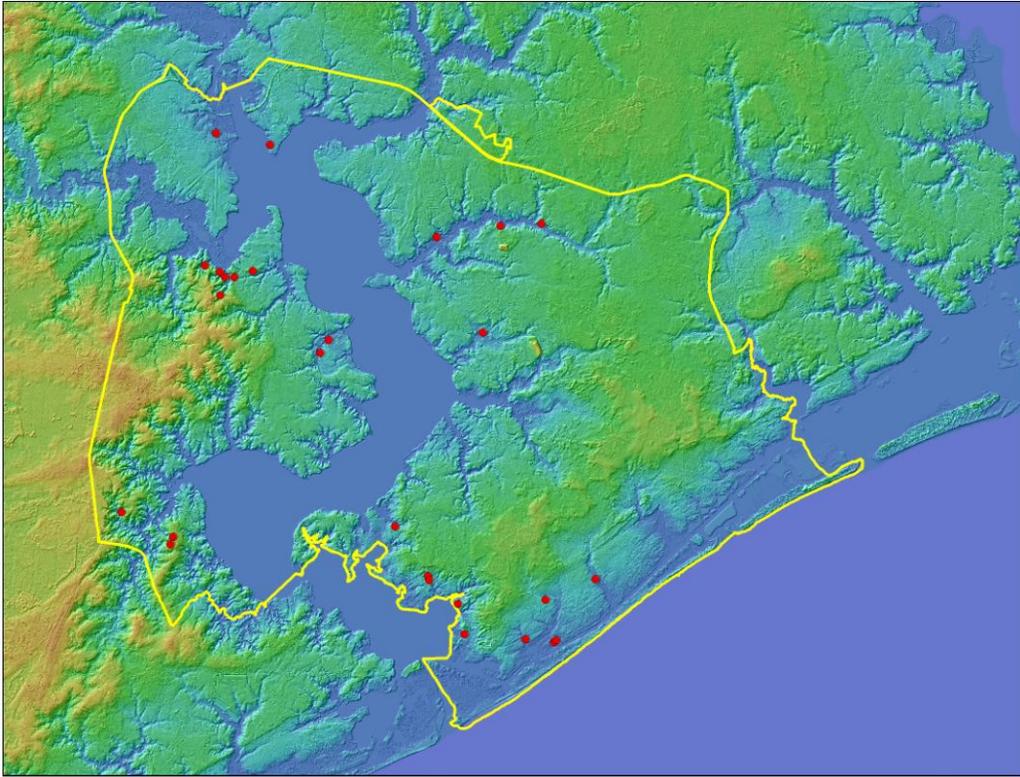


Figure 5-7. Distribution of Stallings series.

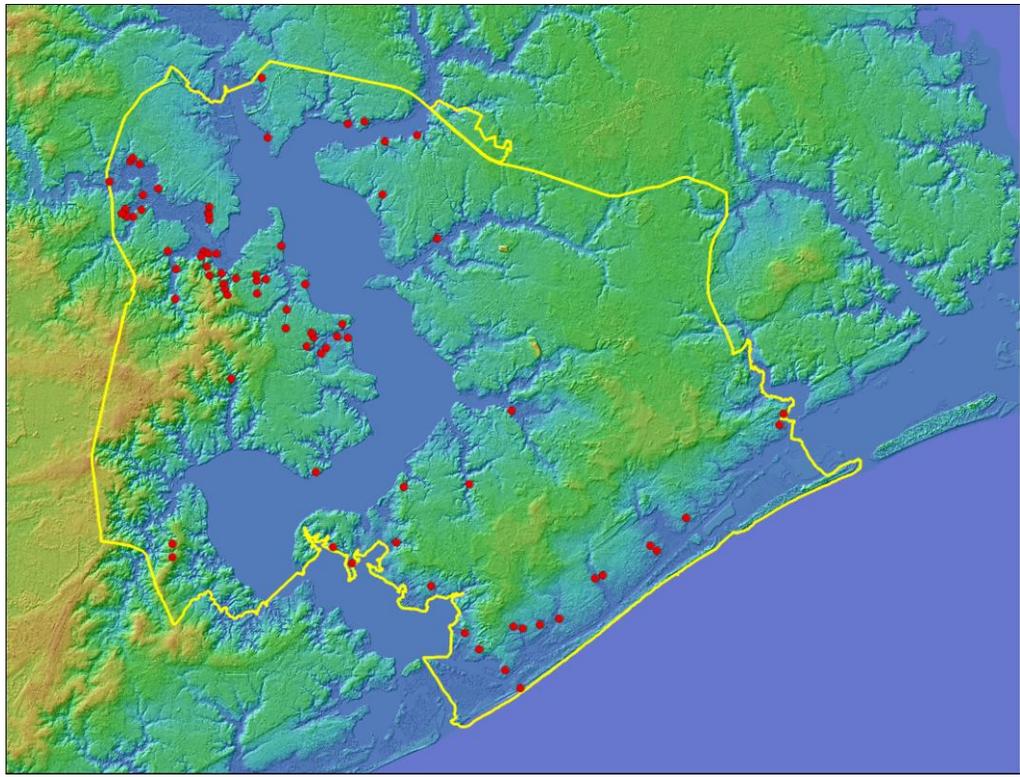


Figure 5-8. Distribution of Thom's Creek series.

along the western side of the middle portion of the New River; and in the southeastern part of the base, from the east side of the lower New River and extending eastward to Browns Inlet and Bear Creek (Figure 5-8). Sites yielding Thom's Creek series sherds are typically found along major drainages or primary tributaries, while sites located along secondary streams or upper headwaters appear to be relatively uncommon.

Hamp's Landing series pottery is characterized by limestone, or in some instances marl and sand, temper, with cord marked, fabric impressed, net impressed, simple stamped, and plain surface treatments (Herbert and Mathis 1996). Stratigraphic association of the Hamp's Landing type suggests a late Early Woodland to early Middle Woodland temporal placement (Hargrove 1993; Hargrove and Eastman 1997:100; Herbert and Mathis 1996:145–146, 157). Herbert (2003:180) observed wide variability in surface treatment on Hamp's Landing sherds, including surface treatments typically found early in the chronological sequence as well as treatments that are found later in the sequence. This led him to suggest that the date range for the Hamp's Landing type could extend later than is indicated by the current suite of dates.

Numerous sites with Hamp's Landing series pottery were identified in the study area and exhibit a strong preference for settlement along most of the major drainages of the base, such as New River, Southwest Creek, Northeast Creek, Wallace Creek, Duck Creek, Holover Creek, Gillets Creek, and Freeman Creek (Figure 5-9). In addition to settlement along major water courses and lower reaches of high order tributaries, groups making Hamp's Landing series pottery appear to have begun to establish more dispersed settlements throughout the area. Although evidence of settlements within upland settings and along low order streams is still uncommon, there are indications that middle portions of primary tributaries, and even the headwaters in a few instances, were used.

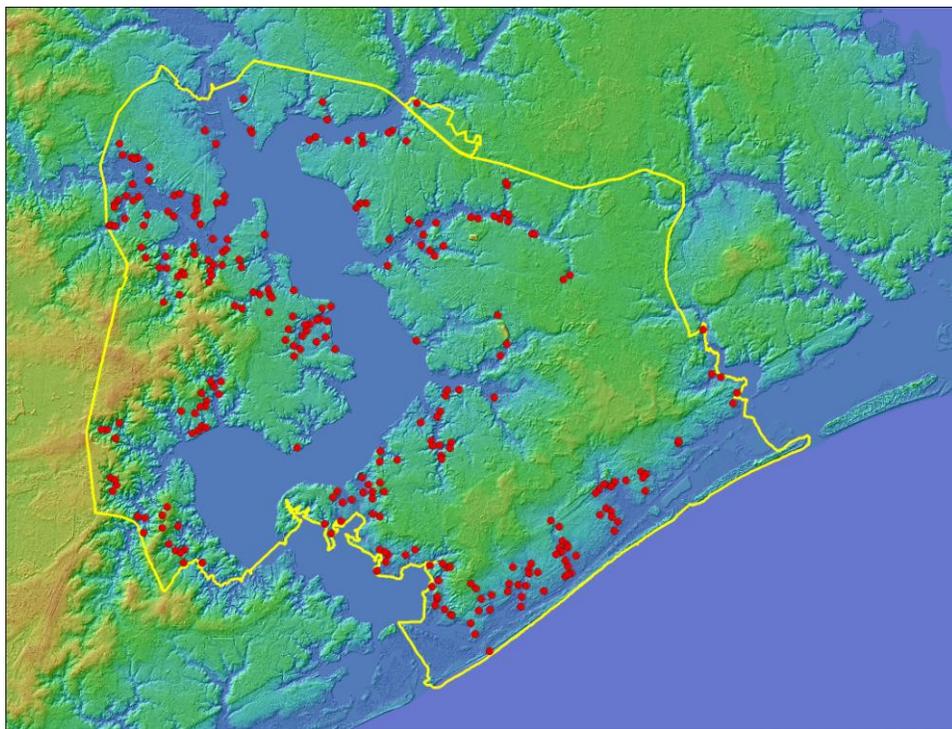


Figure 5-9. Distribution of Hamp's Landing series.

The New River series has been found to date between 1800–450 B.C. and is characterized by coarse sand and/or grit temper with cord marked, fabric impressed, net impressed, simple stamped, or plain surface treatments (Herbert 1997, 1999, 2003; Herbert and Mathis 1996; Loftfield 1976; Millis 2009a, 2009b; Reid and Simpson 1997). The New River series was initially defined by Loftfield (1976) and is comparable to the Early Woodland sand tempered Deep Creek series defined by Phelps (1983) for the northern Coastal Plain. The mapped distribution of sites with New River components essentially follows patterns similar to those of sites with Hamp’s Landing components, but with an increase in site density (see Figure 5-6). Mainly sites with New River series sherds are found along the New River and its primary tributaries, with evidence of settlements extending into the middle valleys. There appears to be a growing emphasis on interior locations with respect to site selection, as sites yielding New River series pottery are observed extending into the headwaters in upland settings and along secondary tributaries; but many other portions of stream headwaters do not show evidence of occupations (Figure 5-10).

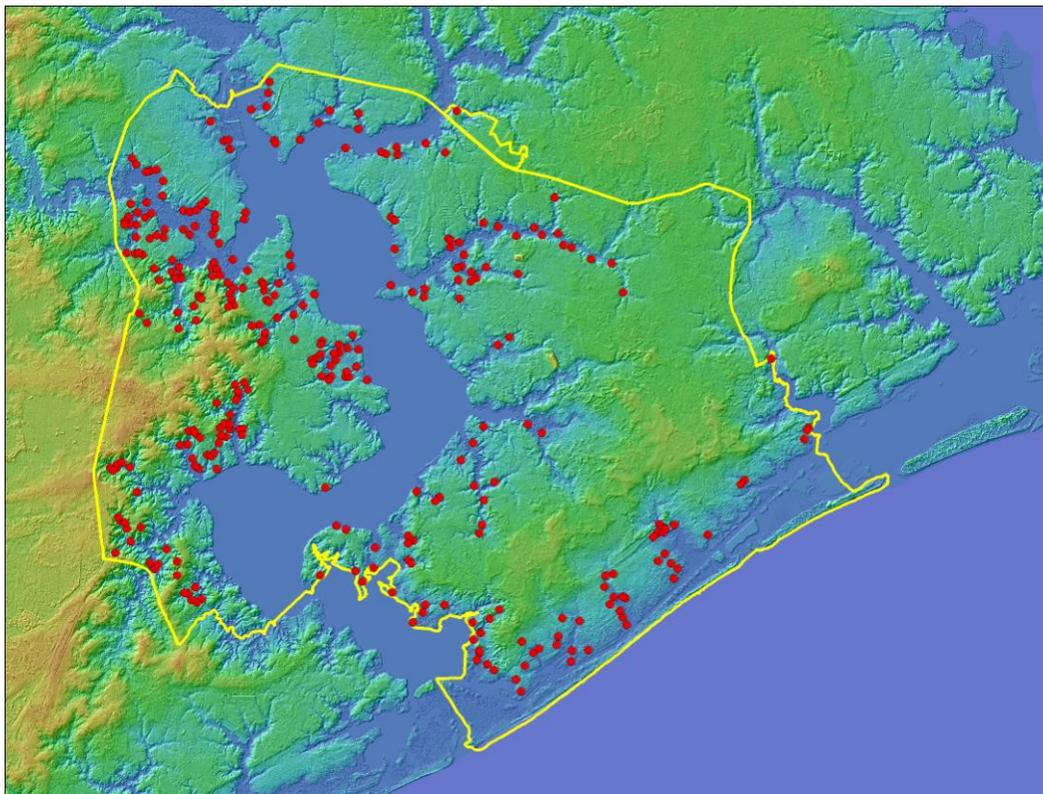


Figure 5-10. New River sites.

#### *Middle Woodland (A.D. 300-800)*

Marine transgression during the Middle Woodland period led to changes in estuary regime and drainage systems in the region. Brooks et al. (1989) have identified four different periods of high sea level during the Middle Woodland and part of the Late Woodland periods in

South Carolina, suggesting that estuaries had expanded considerably over the preceding periods due to gradually rising sea level, resulting in marked changes in the subsistence-settlement patterning. In fact, Brooks et al. (1989) hypothesize that land mass was reduced during the Middle Woodland and part of the subsequent Late Woodland period as a result of rising sea level. They suggest that this likely reduced the size of band territory, resulting in a dispersion of populations into small economic units focused on exploiting a narrow range of highly productive, low-risk, seasonal resources (Brooks et al. 1989:96). Research conducted in South Carolina indicates that sites tend to cluster during periods of high sea level stands due to a reduction in the amount of well to moderately well drained soil (Brooks et al. 1989). Since the amount of acreage available for exploitation is reduced during high sea level, there is a greater tendency for more nucleated sites to be located on higher, well drained soils.

During the Middle Woodland period, there is an increase in the frequency of large and small sites in the Coastal Plain of North Carolina (South 1976; Claassen 1979b). There is a wide and intense distribution of Middle Woodland sites, which account for more sites than any other period of prehistory. In fact, Poplin and Jones (1992:57) found that Middle Woodland components on Camp Lejeune increased nearly two-fold over the preceding period.

Numerous large and small sites have been found dating to this period, suggesting periodic aggregation and dispersion or some kind of a base camp/extractive camp specialization dichotomy. This general trend toward not only an increase in the number of sites, but also in the intensive use of sites and site dispersal, is reflected elsewhere in the Coastal Plain. Claassen (1979b:49) has suggested that an increase in Middle Woodland sites is likely due to an influx of population groups from both the north and the south. Alternatively, it is likely that at least some of the increase in site frequencies may be attributed to a highly mobile settlement system adapting to the changing environment. It is suggested that procurement sites operated as satellite sites of more centrally located base camps, and that these extractive forays were established on a frequent basis in order to exploit the diverse estuarine resources. This hypothesis is in line with the observation that Middle Woodland sites are located on a variety of soil types, which could be a result of the exploitation of diverse biotic communities.

Research conducted by Claassen (1979a, 1979b) and Lofffield (1976) indicates that Middle Woodland occupations in the southern Coastal Plain were more widely dispersed than those of the preceding time period, with settlement patterns indicating a focus on riverine or estuarine environments, which is similar to the pattern observed by Phelps (1983) in the northern Coastal Plain. Lofffield (1981:42) further notes that settlement patterns during the Middle Woodland period in the south coastal region not only shifted from the preceding Early Woodland period, but also generally involve more varied landforms at differing elevations. Sites are also more frequently located along major salt water sounds, as shell midden sites suggesting the first large-scale exploitation of this food source begin to appear during the Middle Woodland period (Lofffield 1981). Aside from an emphasis on riverine and estuarine environments, Lofffield (1981:137) found that Middle Woodland sites were also typically located inland, away from estuarine settings, whereas Claassen (1979b) observed that Middle Woodland sites were typically located on bluffs and knolls. Poplin and Jones (1992:58) have also suggested that Middle Woodland sites tend to be located in more inland situations.

The Middle Woodland period in the southern Coastal Plain is identified by Cape Fear and Hanover, and less occasionally, Deptford ceramic traditions (Lofffield 1976; Phelps 1983; South 1976; Herbert and Mathis 1996). The northerly extent of Deptford pottery, which is rarely found in the area, is the Cape Fear River and the northern tributaries of the Pee Dee River (Lofffield

1976; Phelps 1983:28). Sites with Deptford components are rarely represented on the Base. Of the 19 sites that have Deptford sherds, many are located within the Southwest Creek watershed, or the Holover, Gillets, and Freeman's Creek drainages in the southeastern portion of the Base (Figure 5-11). Although the sample is very small, sites with Deptford series pottery are located along major drainages, but a few occur along smaller tributaries, particularly between Mill Creek and Muddy Creek on the western side of the Base.

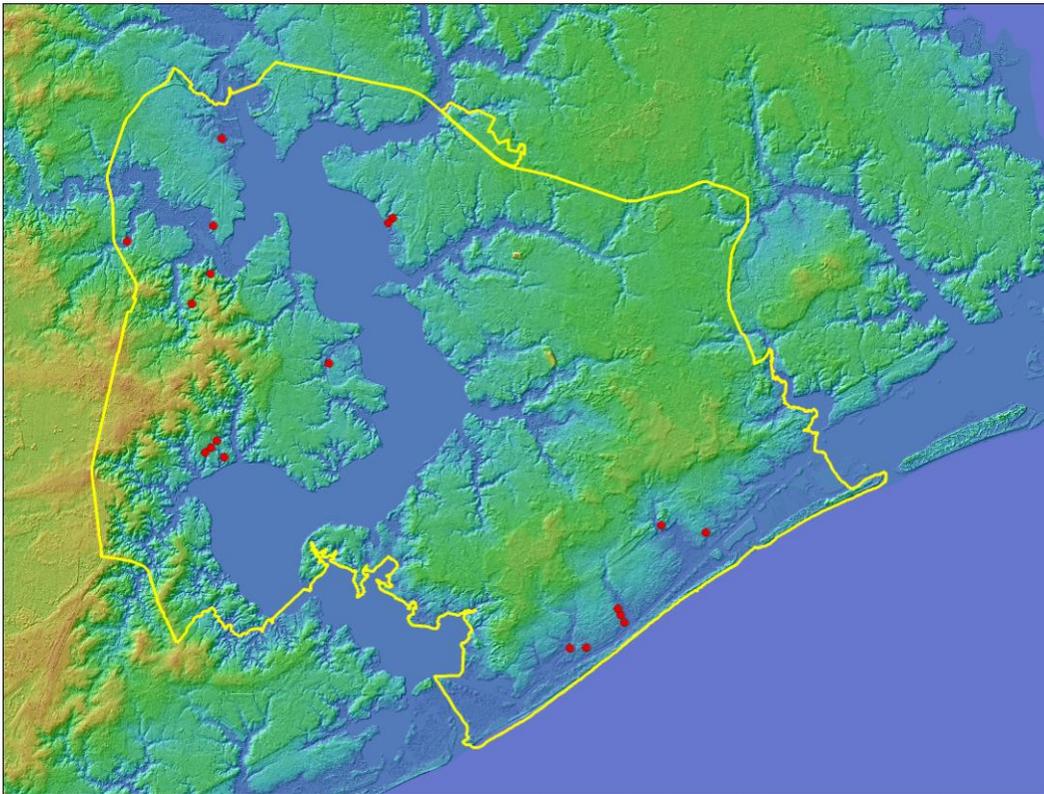


Figure 5-11. Distribution of Deptford series.

Cape Fear ceramics are primarily sand tempered and are similar in many respects to the Mount Pleasant ceramic series to the north (Phelps 1983:35; South 1976). The Cape Fear series was initially defined as medium sand tempered pottery finished with cord wrapped or fabric wrapped paddles, with net impressing represented infrequently. This series was originally placed at the end of the Middle Woodland period (South 1976). Radiocarbon and TL dates suggest an age range from 400 B.C.–A.D. 400; however, several dates post-date A.D. 1000, suggesting continuation into the Late Woodland period (Greene and Millis 2003; Herbert 1997, 1999, 2003; Millis 2009a, 2009b; Norris and Abbott 2004; Reid and Simpson 1997).

Sites with Cape Fear series pottery are represented only slightly more intensively as sites with New River series sherds, as the two series are essentially evenly represented by frequency (see Figure 5-10, Figure 5-12). There does not seem to be any difference in site placement by groups associated with Cape Fear wares, as sites with Cape Fear components appear to have been established in similar environmental settings as previous sites with New River components,

or in the case of sites with Hanover components, are perhaps contemporaneous occupants of the area. The New River and its major tributaries remain the primary focus of settlement by groups making Cape Fear pottery, augmented by sites situated along secondary tributaries, or extending upstream and into the middle valleys. Occasionally, headwaters and upland areas were occupied, and a few sites with Cape Fear series pottery are located along low ranking streams.

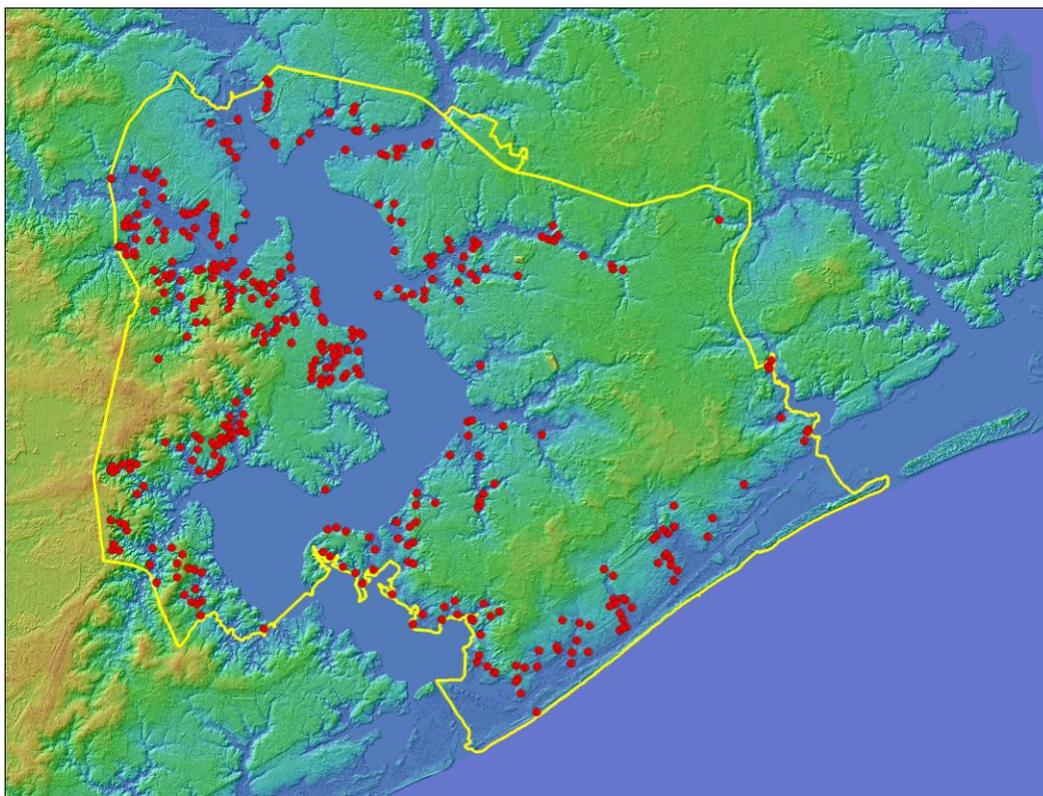


Figure 5-12. Distribution of Cape Fear series.

The clay tempered Hanover series ceramics occur in higher frequency along the coast and are generally found in association with Mount Pleasant ceramics in the interior of the Coastal Plain (Phelps 1983). Hanover series ceramics were originally assigned to the Middle Woodland period, but current radiocarbon and TL dates indicate a general range of ca. 200 B.C.–A.D. 800 (Hargrove 1993; Hargrove and Eastman 1997; Herbert and Mathis 1996:163; Herbert 1997, 2003; Millis 2009a; Norris and Abbott 2004; Reid and Simpson 1997; South 1976:16). There is some indication that the tradition of tempering with clay or grog in the southern Coastal Plain may extend well into the Late Woodland period (Herbert 1999:39, 2003:74, 19, 193–194). In fact, there are several TL dates obtained from Hanover sherds on Camp Lejeune that post date A.D. 800 (Greene and Millis 2003).

A significant increase in site density is evident for sites with Hanover series pottery, which are more prevalent than any other component on the Base (see Figure 5-6). Earlier and later groups also occupied many of these sites, as a large number of sites with Hanover components also contain evidence of occupation by groups making Hamp's Landing, Thom's

Creek, New River, Cape Fear, and White Oak wares. Like the spatial distribution of Cape Fear pottery series, sites with Hanover components demonstrate a strong preference for major drainages and their primary and secondary tributaries (Figure 5-13). A substantial number of sites with Hanover series sherds are located adjacent to interior stream confluences and there is some evidence that headwaters and lower order streams extending into the uplands were occupied. However, in some areas sites with Hanover components are confined to the lower and middle portions of drainages, and there is an absence of occupations extending into the upper reaches of streams.

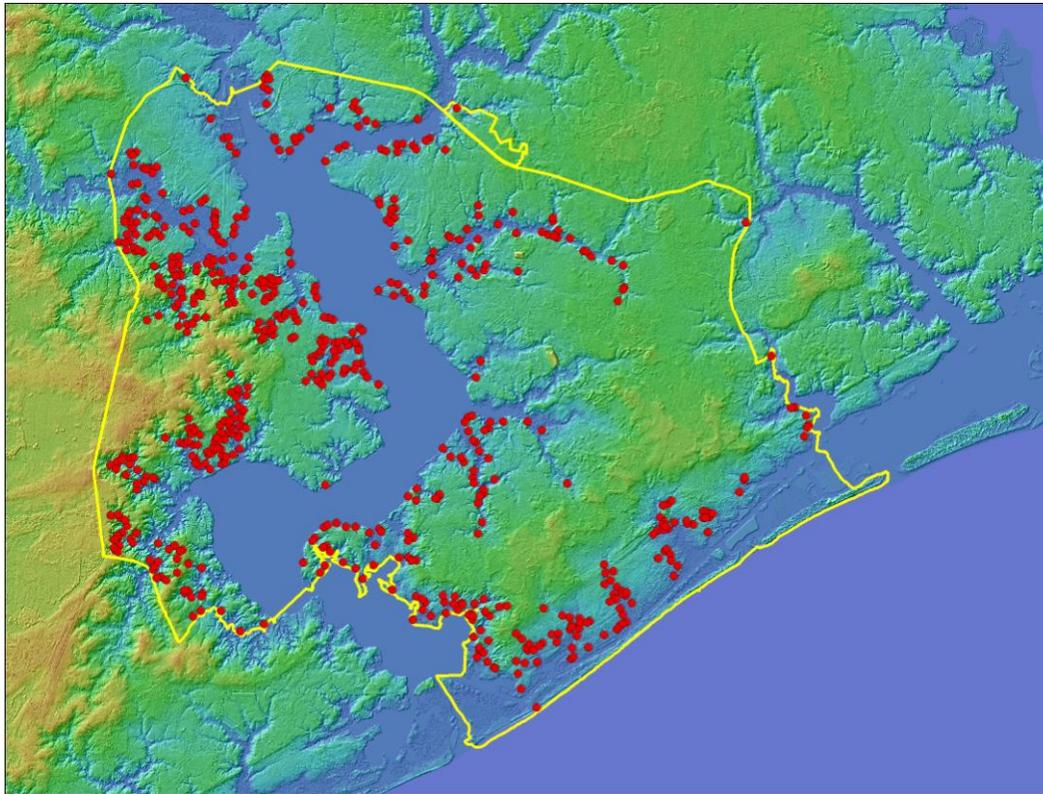


Figure 5-13. Distribution of Hanover series.

In addition to the Deptford, Cape Fear, and Hanover ceramic traditions, Loftfield (1976) has identified the Onslow series as a grit tempered ware that is characterized by cord marked, simple stamped, and plain surface treatments. Very little is known of the chronology of Onslow series sherds and, with the exception of one AMS date of A.D. 660 from the Onslow Beach site (31ON1246) on Camp Lejeune (Millis 2009c), we have not been able to contribute any information based on conventional absolute dating techniques to resolve this problem. On the basis of seriation sequence, stratigraphic test excavations, and one radiocarbon date of A.D. 810 obtained from the Flynt site (31ON305) located just to the southeast of the Base, Loftfield (1976:199; 1987a) suggests that the Onslow series likely occurs between the Hanover and White Oak series, indicating a Middle Woodland or early Late Woodland temporal placement.

Sites with evidence of Onslow series pottery primarily occur in several separate portions of the Base (Figure 5-14). One cluster occurs in the northern part of the New River estuary and includes Southwest, Northeast, and Wallace creeks. Another cluster of Onslow sites is located in the lower New River, particularly along Courthouse Bay, Traps Bay, and Howard Bay and extending northeastward along the coast. Nearly all of the sites with Onslow components co-occur with sites also containing Hamp's Landing, New River, Cape Fear, Hanover, and White Oak components. Consequently, spatial distribution across the landscape follows a pattern similar to that noted for these ceramic traditions.

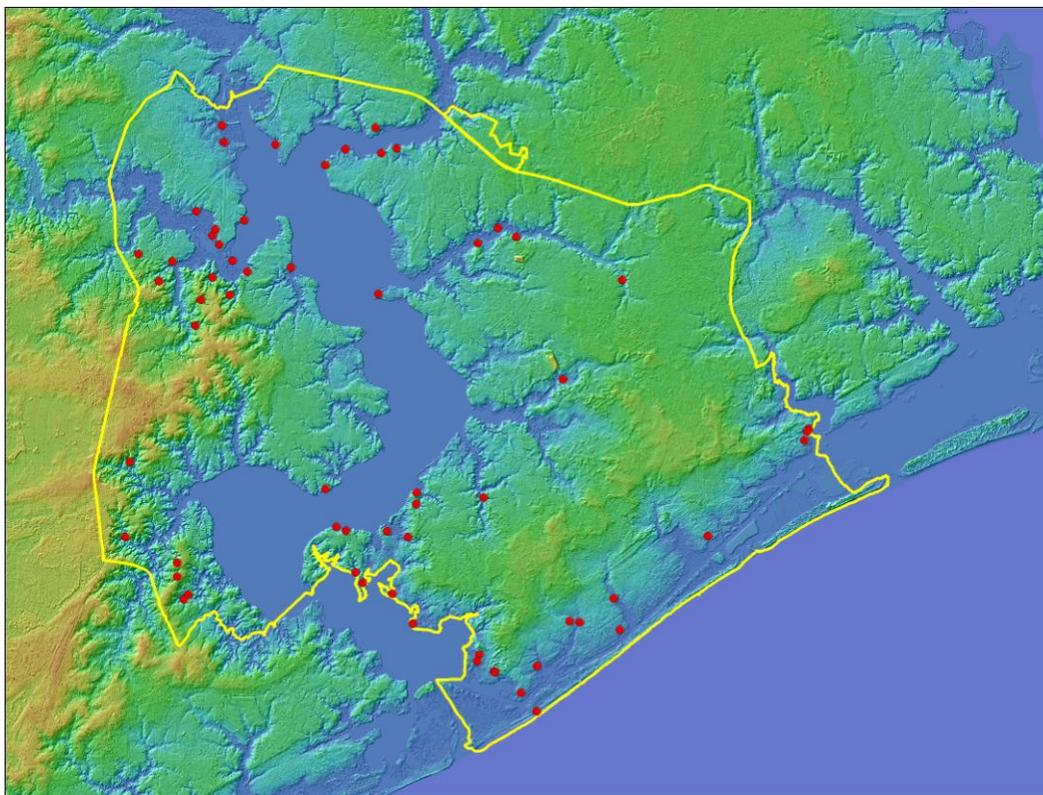


Figure 5-14. Distribution of Onslow series.

#### *Late Woodland (A.D. 800-1585)*

A decline in the number of sites dating to the Late Woodland period has been observed during earlier investigations of the southern Coastal Plain in and around Onslow County (Claassen 1979b; South 1976). It has been suggested that this results, not from a population collapse, but rather a coalescing of population groups into larger occupied sites, such as villages (Claassen 1979b:50). The decline in the frequency of sites from this period may also be associated with severe environmental changes. Stahle (Stahle and Cleveland 1996; Stahle et al. 1988) has found evidence among millennium-old bald cypress trees from the Black River, approximately 40 miles west of the Camp Lejeune study area, that suggest the period between A.D. 1100–1300 was marked by several prolonged droughts. After the droughts had ended, the

area was characterized by relatively wet conditions following the onset of the Little Ice Age from approximately A.D. 1300–1600.

Late Woodland sites on Camp Lejeune are generally located in estuarine settings, with shell-tempered ceramics rarely found on interior sites (Loftfield 1981:137). Although Late Woodland groups practiced horticulture, they preferred estuarine settings in order to exploit shellfish and an abundance of other coastal resources during periods of low agricultural output. An increased emphasis on shellfish collecting, and to some extent horticulture, during this period suggests that Late Woodland groups were engaged in a focal economy (Poplin and Jones 1992:57).

During the Late Woodland period, native populations became permanent and year-round residents of the coast. Larger settlements were comprised of villages consisting of several longhouses, likely based on kin-groups, spaced over considerable distances along the shoreline (Loftfield and Jones 1995:133; Mathis 1995), an example of which is the Broad Reach site to the north of the study area in Carteret County (see H. Millis, this volume). The sites are characterized by dense shell middens that presumably accumulated on a seasonal basis. Other resources, including a variety of fish, terrestrial mammals, birds, and plants were also heavily exploited (Scarry and Scarry 1997). The relatively low frequency of corn and other cultigens recovered from archaeological contexts suggests that horticulture was practiced on a limited basis and that crop cultivation was not a significant part of the subsistence strategy until the end of the Late Woodland period, possibly as late as the 15<sup>th</sup> century (Mathis 1995). Although there was a seasonal shift in resource procurement, this apparently did not necessitate a complete residential move (Mathis 1995).

It has been postulated that the Neuse River drainage served as a demarcation zone for the coastal populations. Phelps (1983) noted that by the Late Woodland period and extending up until the time of European contact, there were three identifiable linguistic groups occupying the Coastal Plain of North Carolina. The Iroquoian speaking Tuscarora, Meherrin, and Nottaway occupied the north coastal region in the Inner Coastal Plain, with the southern boundary thought to be around the Neuse River. Phelps (1983) noted that in the tidewater region of the Coastal Plain, archaeological sites associated with Algonquin groups are generally located north of the Neuse River, while archaeological sites associated with the Siouan speaking Waccamaw and Cape Fear are usually located south of the Neuse. As shell tempered ceramics occur as far south as the Cape Fear River, however, others have suggested that the Neuse River was not the line of demarcation, but rather that the Cape Fear drainage was more likely the southern terminus of the Algonquian influence and territory (Loftfield 1976, 1987b, 1990; Mathis 1995). Based on his excavations of an ossuary at Camp Lejeune, Loftfield (1987b) suggests that Algonquians had moved into the central coastal region from a northerly center and subsequently acquired southern traits as they assimilated with their Siouan neighbors.

There is substantial archaeological evidence that suggests that the prehistoric Carolina Algonquin territory, or at least strong Algonquin influences, extended well south of the Neuse River, and possibly as far south as the Cape Fear River, which is also the southern terminus of the Tidewater environmental region. Several cultural traits strongly suggest that the Carolina Algonquians occupied a portion of the south coastal region, at least as far south as Pender County and possibly into New Hanover County. The White Oak shell tempered series appears related to the Mockley, Townsend, and Colington series pottery associated with Algonquin populations located to the north in Maryland, Virginia, and the North Carolina Tidewater regions. However, techno-functional elements, such as tempering, can transcend temporal,

cultural, and linguistic boundaries; therefore, the presence of shell tempered ceramics alone may reflect trade and exchange, rather than actual Algonquian settlement (Mathis 1995).

The White Oak ceramic series, initially defined by Loftfield (1976), represents the only major shell tempered pottery identified within the southern Coastal Plain. Numerous radiocarbon dates place the White Oak series firmly in the temporal range of A.D. 800–1500 (Eastman 1994:25–26; Herbert and Mathis 1996:171). Based on these data, Algonquian groups appear to be present as far south as the New River Inlet and the Camp Lejeune study area by A.D. 900 (Mathis 1995).

White Oak sherds are the second most common ware represented in our artifact assemblages ( $n=7,754$ ), only slightly behind Hanover sherds, which are the most common series based on frequency ( $n=10,943$ ) and sherd weight (Figure 5-15). With the exception of Hanover ware, sherds representative of the White Oak series were recovered more than any other ware type, yet they are represented at about one-third ( $n=122$ ) of the number of sites as those producing the Early Woodland New River series ( $n=312$ ) (see Figure 5-6, Figure 5-15). Even though there are significantly fewer sites with White Oak components, these sites tend to be considerably larger in size than sites with other components, a pattern observed by other researchers. Consequently, the lower frequency of White Oak settlements likely does not represent population decline or area abandonment, but rather the area inhabitants coalescing into fewer but larger communities.

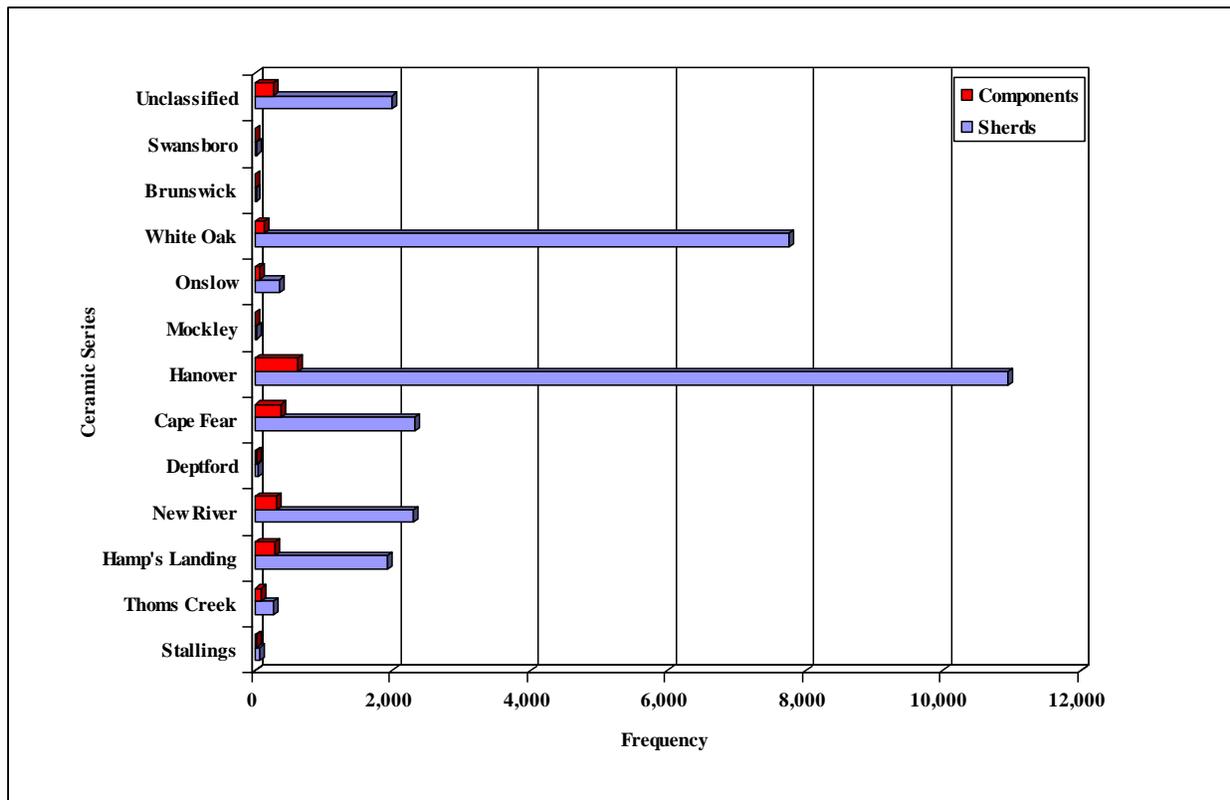


Figure 5-15. Frequency of sherds and components by ceramic series.

The upper and middle sections of the New River estuary north of Town Point and Hadnot Point, including the major tributaries Southwest Creek and Northeast Creek, were occupied by groups making White Oak series pottery (Figure 5-16). One of the larger known concentrations of sites with White Oak components is clustered around the mouth of the New River and along the Atlantic coastline. The major focus of sites with White Oak series pottery in this area extends from Pollocks Point downstream in a southeasterly direction to Howard Bay and then northeast along the coast, especially within the Holover, Gillets, and Freeman creeks drainages. Sites with White Oak components are typically located immediately adjacent to water sources within the coastal environs, but a number of sites that we recorded are located either upstream of primary tributaries, such as the upper portion of Duck Creek, or situated in interior settings along smaller secondary tributaries, particularly in the Southwest Creek and Stones Creek drainages.

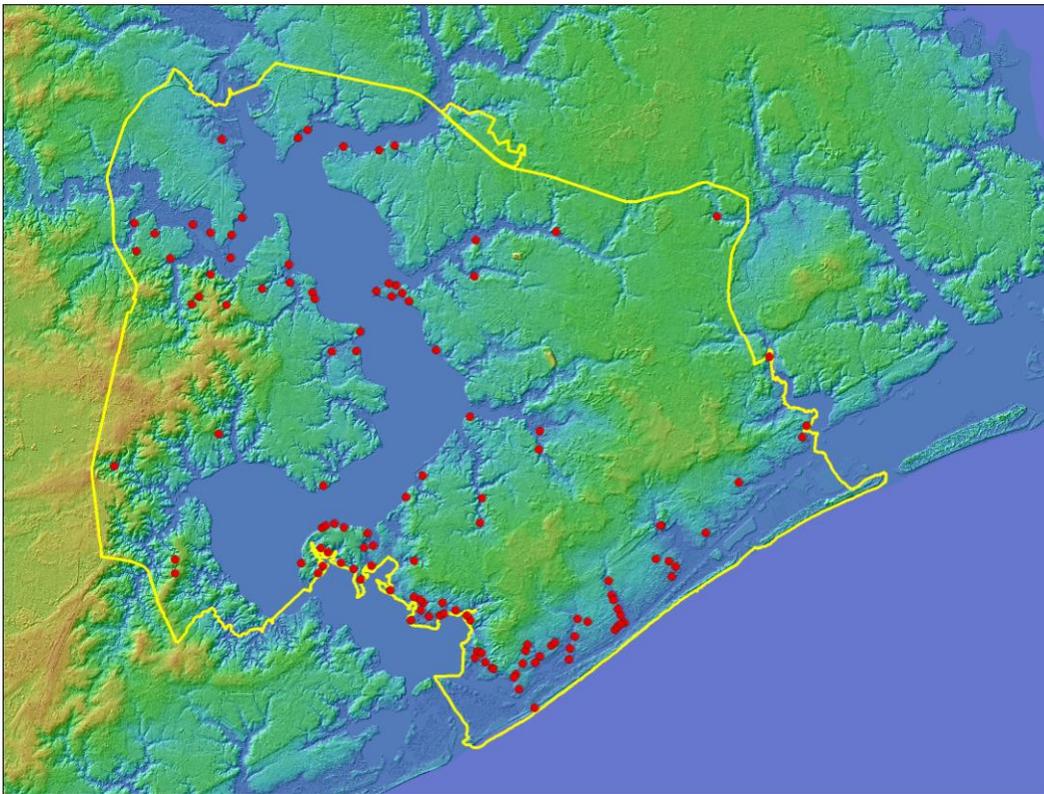


Figure 5-16. Distribution of White Oak series.

Although the White Oak series is typically regarded as the only major shell tempered series present in this region, aside from Swansboro ware, a small number of sherds represented in our collection were tempered with shell, but fall outside of these series classification parameters. These sherds display net impressed surface treatments, and often the paste is thick and poorly molded. Classified as Mockley and possibly associated with the Middle Woodland period or early in the Late Woodland sequence, pottery sherds of this series were recovered from only five sites that are dispersed along the middle valley of the Wallace and Duck creeks drainages and along the shore of the New River (Figure 5-17).

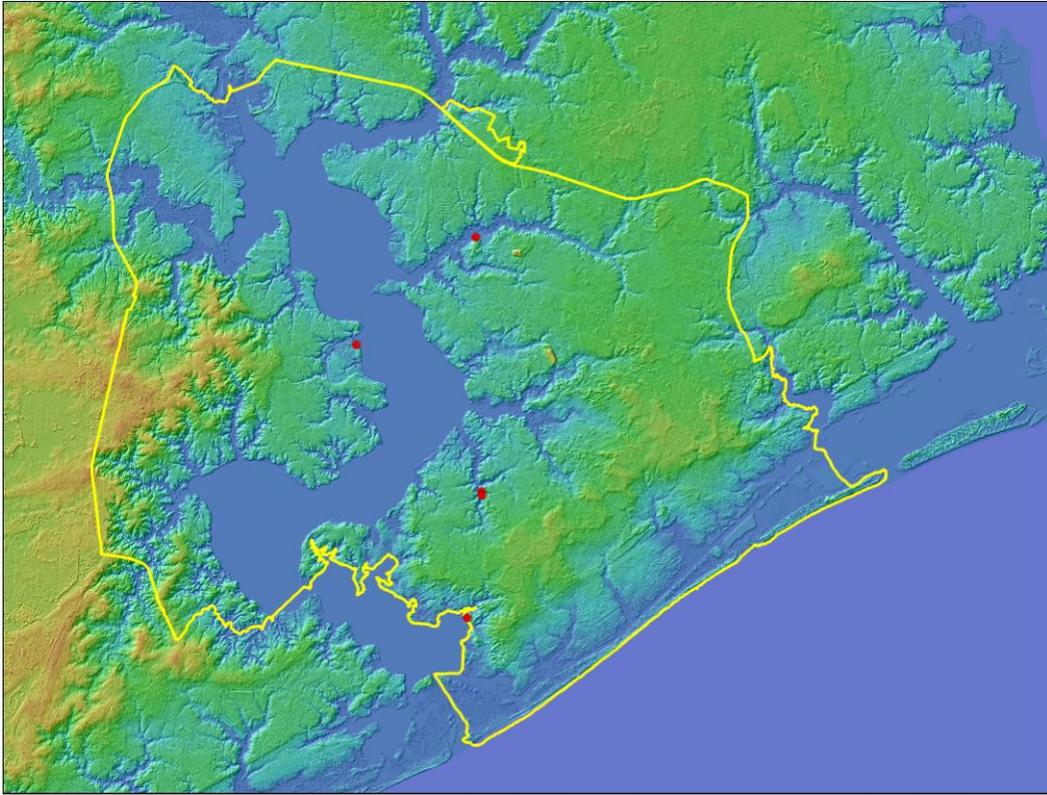


Figure 5-17. Distribution of Mockley series.

The presence of net impressed surface treatment on shell tempered sherds is known from only a few sites on the central coast (Herbert 2002:313). However, it has been observed elsewhere in Onslow County at the Hammocks Beach West site (Daniel 1999) and farther to the north in Carteret County at the Long Point (Shumate and Shumate 2000) and the Broad Reach sites (see H. Millis, this volume). Although Loftfield (1976) included the net impressed variety within the White Oak series, Mathis (1999) has argued against placement of this surface treatment into the White Oak series. Based on his excavations at Hammocks Beach West, Daniel (1999:128) suggests that if net impressed surfaces on shell tempered pottery mark the beginning of the use of this temper during the Middle Woodland period, then these sherds may represent a close association with the more northern Mockley ware found in the northern Coastal Plain of North Carolina and the Middle Atlantic states.

#### *Historic Native Americans (1585–1715)*

The Historic period began during the latter part of the sixteenth century and Native American occupation of Onslow County continued into the Colonial period. This era was a time in which Native Americans were exposed to unprecedented cultural changes as a result of increasing encroachment and settlement of their territory by European settlers. Native American encounters with the new settlers ultimately led to major changes in the demographics of the indigenous population of the region, but it was not until the Tuscarora War of 1711–1713 that the coastal Indian population was eventually relocated.

Based on the limited linguistic information, Mathis (1995) suggested that the area along the southern shore south of the Neuse River was inhabited by either Iroquoian or Siouan speakers by the late sixteenth century, rather than by Algonquian groups. Sometime between A.D. 1500 and A.D. 1585 when the Roanoke Colony was established, the Algonquian groups appear to have abandoned much of the area south of the Neuse River (Mathis 1995). It is uncertain if the native populations were acculturated into an expanding population of Siouan or Iroquoian speaking groups, or if the Algonquian groups retreated northward toward tidewater Virginia as a result of their declining population or some other environmental stress. Based on the lack of radiocarbon dates associated with White Oak pottery after A.D. 1450, Mathis (1995) suggested that this retraction or cultural absorption occurred, or was well underway, prior to Spanish or English contact during the fifteenth century and that the Algonquians were no longer in control of their land south of the Neuse River by the 1580s, if not earlier. In fact, it is likely that Algonquians occupied the region south of the Neuse River until the fifteenth and sixteenth centuries, after which Siouan speaking people expanded into the vacated Algonquian land.

Ethnohistorical observations suggested to Lofffield (1976) that shellfish were exploited during the late spring and summer months, primarily from late April through July, during the agricultural growing season. Claassen (1982:184, 1986:26) provides evidence that suggests shellfish were indeed seasonally exploited, however, the collecting season during the Middle and Late Woodland periods typically began in the fall and continued into the spring, with the major period of exploitation occurring from November through April. On the basis of seasonality studies at a few sites in Onslow County where summer collections were indicated, Claassen (1982:188–189; 1986:26, 31) has proposed that the aboriginal seasonal round shifted from winter and spring coastal camps to summer coastal camps. This change in settlement pattern was likely fostered by the desire to trade with European ships that ventured into the sounds and bays during this time of year (Claassen 1982:189, 1986:26, 31–33). According to Quinn (1955:158–253), between 1584–1602, English ships typically departed from England in April and arrived on the North Carolina coast in July or August. On the basis of the change in settlement patterns observed both archaeologically and reported ethnographically, it is likely that the annual arrival and departure of European ships between the late sixteenth and early seventeenth centuries attracted indigenous groups to the coast during summer months, and it was the potential for trade during this time of the year that provided an impetus to establish coastal summer camps at a time in which the area was not normally as intensively occupied (Claassen 1982:189). Interestingly, a shift in seasonal rounds at the end of the Late Woodland and during the Contact and early Historic periods has been noted elsewhere along the Atlantic coast, as far north as New York and Rhode Island. Several researchers working in the Northeast region have proposed that the population shift in this region during the early Historic period was in order to facilitate greater access to, and increase trade with, Europeans (Ceci 1977; Pagoulatos 1990).

The last indigenous ceramic wares found in the study area are the Swansboro Burnished and Brunswick Burnished types (South 1962, 1976). The Swansboro series is associated with the latter part of the Late Woodland and the Contact period and is characterized by fine or medium crushed shell temper and a burnished surface. The Brunswick ware type dates to the Proto-historic and Historic period, up to the third quarter of the eighteenth century (Herbert 2003:82; South 1976:33–38). This ware is characterized by a very compact paste with either no discernible temper, or very fine sand temper, and a burnished surface.

At some point during the end of the Late Woodland and Contact periods, the New River estuary was apparently abandoned. The only evidence of Native American occupations that may

post-date the White Oak series is the presence of Swansboro pottery sherds at six sites and Brunswick series pottery at six sites (Figures 5-18 and 5-19). However, since burnishing is represented within the White Oak assemblage, it is possible that some of these Swansboro components are contemporaneous with the White Oak components, rather than post-dating them. In addition to sites with Swansboro series sherds we recorded on Camp Lejeune, Southerlin excavated a burial associated with a Swansboro bowl at 31ON1578, just to the southwest of the Base (Bobby Southerlin, personal communication 2008). Our sample of sites with Swansboro and Brunswick components is relatively small, so observations about series distribution within various environmental settings are tenuous. It appears that, with the exception of one site in the middle Duck Creek and one site in the middle Southwest Creek drainages, the lower portions of the New River and along the Atlantic coast may have been the focus of settlement by groups making Swansboro and Brunswick series pottery during the very late prehistoric and early historic periods. If the Swansboro and Brunswick burnished sherds indeed post-date the White Oak ceramic tradition, then this pattern could support a population shift toward coastal locations, potentially in response to a desire for increased access to European traders as noted elsewhere for the Contact and early Historic periods.

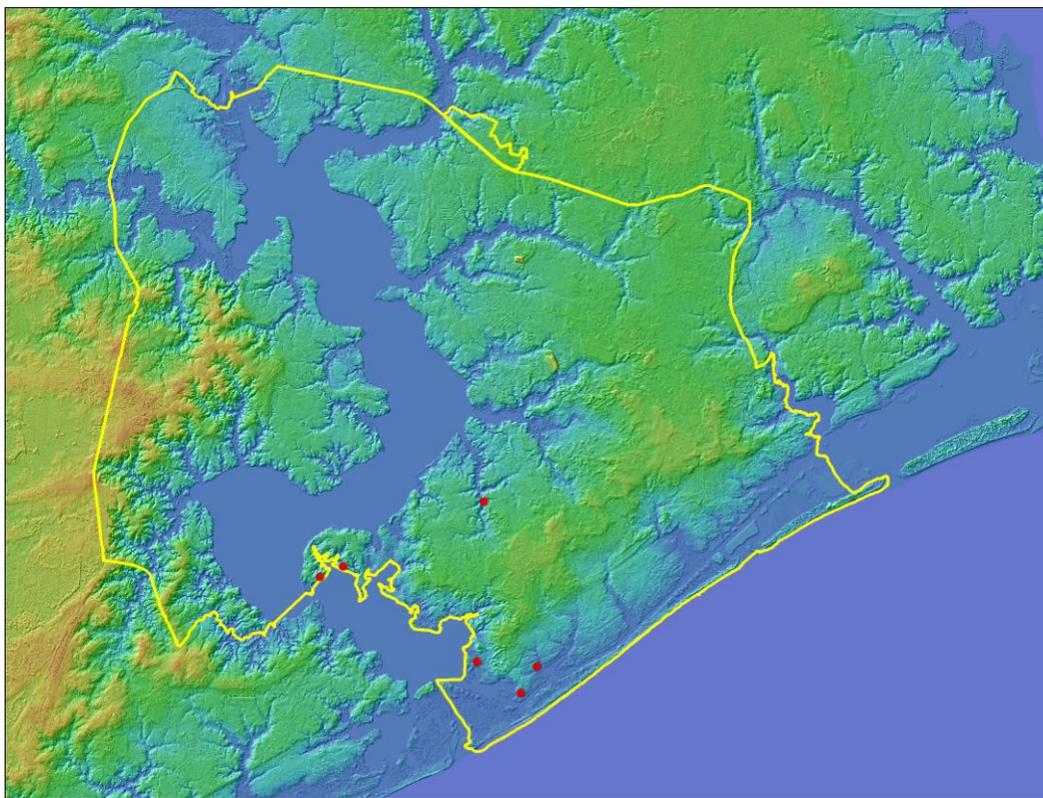


Figure 5-18. Distribution of Swansboro series.

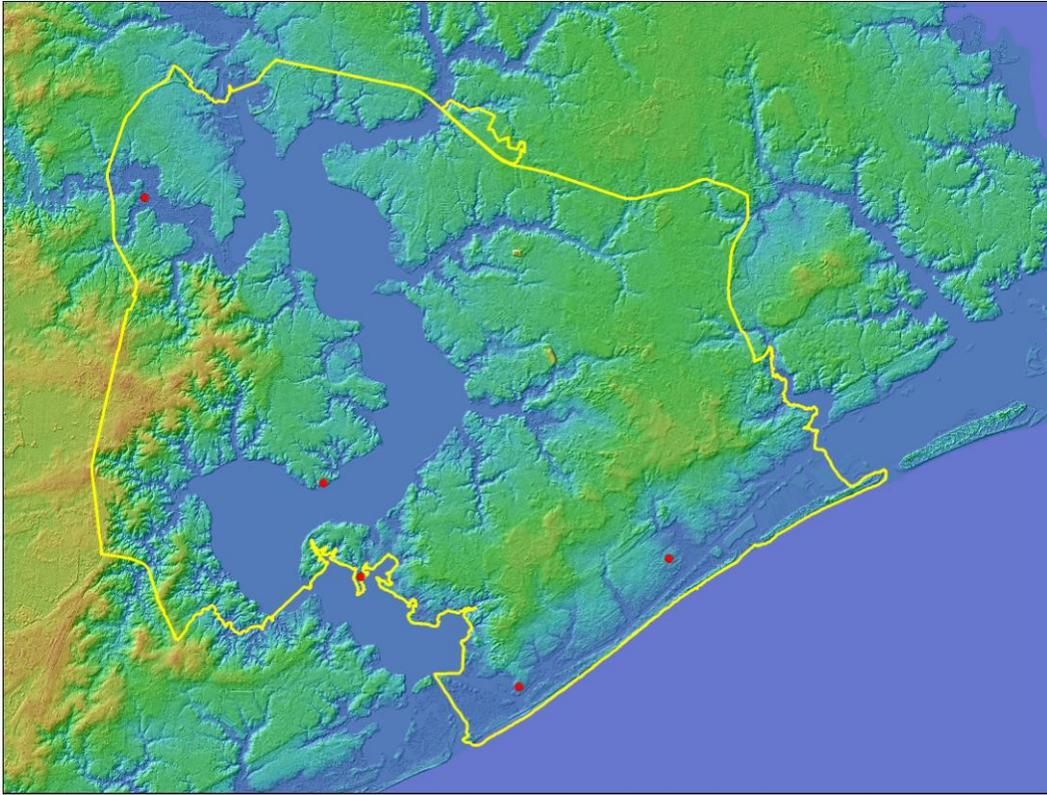


Figure 5-19. Distribution of Brunswick series.

## CONCLUSIONS

Intensive surveys conducted from 1998–2008 provided the basis for an examination of Woodland period occupations in the New River estuary. Many of the sites recorded on Camp Lejeune during this time contain multiple components, suggesting extensive use and reuse of the sites during the Woodland period. By considering the data obtained from the assemblages included in this study, major trends in spatial distribution are apparent and general patterns of geographic distribution of ceramic traditions can be discerned within the New River drainage system. Data presented in this study, coupled with comparisons to results from other regional studies, suggests movements between the stream drainages and potential resource exploitation, and still support some of the initial observations of prehistoric settlements in Onslow County formed more than 30 years ago.

During the Early Woodland period, there seems to have been a rapid increase in the number of components associated with the different ceramic traditions dating to this period. There was also a strong preference for sites associated with this temporal period to be located along estuarine margins and near major stream channels and tributaries rather than on headwaters, which could suggest an emphasis on aggregation. With regard to landscape preferences along drainage systems, we found that many of the known site locations with Thom's Creek components show a very definite orientation toward major drainages and primary tributaries. Sites with Hamp's Landing and New River components have similar preferences, but by the time the area was occupied by groups making Hamp's Landing and New River series

pottery, the lower and middle valleys of the tributaries were used, with occupations also occurring along the headwaters in upland settings.

Site frequency reached its highest point during the Middle–Late Woodland periods, and sites displaying evidence of Hanover components occur more frequently than sites containing any of the other Woodland ceramic traditions. While the Middle–Late Woodland period Cape Fear and Hanover traditions coexisted and overlapped in time with the succeeding White Oak pottery series, distribution of sites associated with these three ware groups do not exhibit any spatial differences that would suggest clearly defined boundaries of group territories. Instead, the emerging pattern is that these groups coexisted on the same landscape within the New River drainage.

Location of sites with Cape Fear and Hanover components were less constrained than other Woodland phase settlements and were widely distributed over various environmental settings. Sites associated with these ceramic series can be anticipated in most settings, a pattern not observed with sites containing the other ceramic traditions, as sites containing other Woodland pottery series appear to exhibit a narrow range of environmental preferences in terms of site selection. While sites with Cape Fear and Hanover components are predominantly concentrated on terraces along major and minor water courses, there was also an increase in usage of inland resource areas and upland zones. Groups making Cape Fear and Hanover wares appear to have settled along the New River and its major tributaries, and extended upstream into the middle valleys or occasionally along headwaters and within upland areas along low order streams. The increase in sites with Cape Fear and Hanover series pottery may or may not be related to population density, as it could also suggest a higher degree of mobility or settlement fragmentation and scattering.

Locations of sites associated with Onslow wares reflect an emphasis on primary and secondary tributaries in the upper part of the estuary, as well as the lower New River and along the coast. Sites with Mockley sherds are sparsely present and found along the New River or the middle valley of primary and secondary tributaries. During the Late Woodland period, a trend toward fewer, larger sites is evident by groups making White Oak series pottery. The White Oak phase settlement range was more limited, with a general contraction to riverine settings at relatively lower elevations. The upper and middle regions of the New River and its major tributaries contain sites with White Oak assemblages, but there are some sites upstream of primary tributaries or along secondary drainages. However, the primary focus of sites with White Oak series pottery was on the lower New River and along the coast. During the late prehistory, the focus of sites with Swansboro and Brunswick pottery sherds was primarily along the lower part of the New River and along the coast, suggesting that the area had been largely abandoned by the early Historic period.

Recent research into Woodland period chronology of the Coastal Plain forces us to acknowledge a dynamic culture history. Rather than abrupt or wholesale geographic displacement of Woodland groups producing a particular ceramic series, data from Camp Lejeune suggest that there was more of a blending and/or gradual shift in characteristics of the various regional ceramic traditions. Based on radiometric and TL dates presented by Herbert (1999, 2003, this volume), there appears to be considerable temporal overlap of ware types, with several, particularly Cape Fear, Hanover and White Oak series, apparently coexisting, at least for a time. This could suggest that these wares were in circulation at the same time, and that shell tempered, sand tempered, and clay tempered pottery share a common period of usage. It is uncertain if these three ware groups are representative of distinct socio-cultural groups, or if

these three traditions were manufactured by the same group. If they represent separate ethnic or linguistic groups, the groups utilizing these three ceramic traditions appear to have been moving within overlapping territories, occasionally occupying the same sites and possibly exchanging vessels and/or sharing technology. Spatial segregation of these three groups within the New River estuary is not apparent, and there may have been direct competition for estuarine resources by those groups associated with Cape Fear, Hanover, and White Oak ceramic traditions.

The observations presented here offer insight into group ranges and economic or environmental constraints associated with environmental setting and provide a foundation on which to build future Woodland period interpretations. Future research regarding landscape use should focus on distinguishing functionally discrete site locations to determine if they represent economic differences, particularly during the Early Woodland period. Spatial and temporal overlap of various ware types and similar land use patterns also open discussion of social dynamics, and continued research in the region should address the nature of the correlations between two or more ceramic traditions and the processes under which one ceramic tradition could come to replace and/or be integrated with another geographically. As our knowledge about site preferences grows, our understanding of the complex Woodland cultural landscape in the southern Coastal Plain will be more complete and we will be able to make more definitive statements concerning usage of the New River estuary.

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