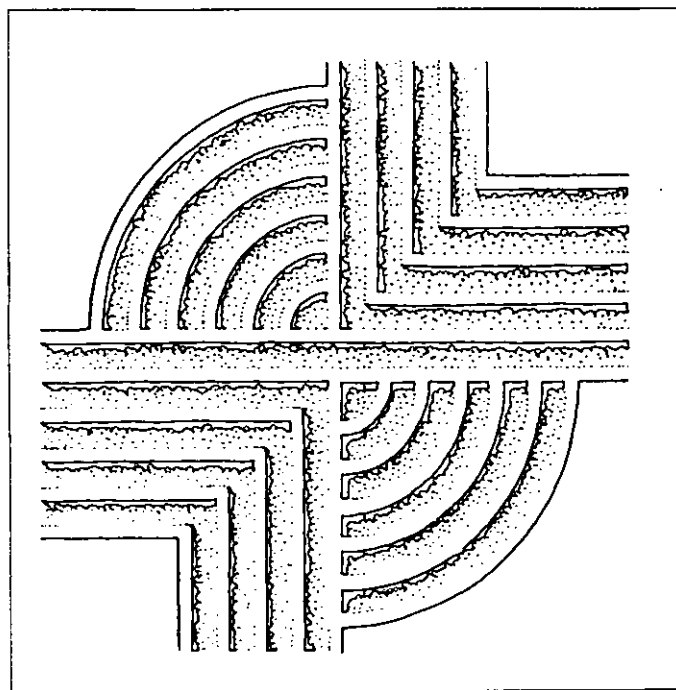


ARCHAEOLOGICAL SURVEY OF
A PROPOSED WASTEWATER SEWER
LINE, BERKELEY COUNTY,
SOUTH CAROLINA



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**ARCHAEOLOGICAL SURVEY OF A
PROPOSED WASTEWATER SEWER LINE,
BERKELEY COUNTY, SOUTH CAROLINA**

Prepared By:
Michael Trinkley, Ph.D.

Prepared For:
Mr. Mark Principe
Sabine & Waters
P.O. Box 1072
Summerville, S.C. 29484

Chicora Research Contribution 222

Chicora Foundation, Inc.
P.O. Box 8664 □ 861 Arbutus Drive
Columbia, South Carolina 29202
803/787-6910
Email: chicora1@aol.com

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ABSTRACT

This study reports on an intensive archaeological survey of the approximately 4.5 mile long industrial wastewater sewer proposed by the Berkeley County Water and Sanitation Authority. This corridor includes three distinct sections. The first runs from their treatment facility on Red Bank Road along the edge of the road for about 1.7 miles to the Back River. The second section picks up on the north bank of the Back River and continues an additional 2.0 miles to the north edge of the Bayer Industrial property. The third segment runs eastward from Red Bank Road, along the edge of the Bayer tract, to the marsh of the Cooper River. In all areas we anticipate a right-of-way about 50 feet in width, with a somewhat more constrained construction zone.

Much of the project route follows corridors which have already been heavily impacted by road construction, power lines, a buried natural gas pipeline, and the construction of a bike and jogging path. The portion crossing the Bayer tract is heavily wooded, but the soils are very low and poorly drained.

The archaeological survey in much of the corridor consisted of pedestrian survey with visible inspection of heavily impacted areas, with shovel testing used intuitively to evaluate soils and disturbance. The portion of the corridor running through the Bayer property from Red Bank Road to the Cooper River required shovel testing. The initial interval of 100-feet was quickly altered to testing at every 200-feet, given the nature of the soils.

Prior to this study several intensive archaeological studies in the general area had failed to identify any archaeological remains on the survey corridor. No archaeological sites for the project zone were identified at the South Carolina Institute of Archaeology and Anthropology. The South Carolina Department of Archives and History reports that there are no known National

Register sites in the corridor, although Otranto Plantation Indigo Vats are situated in the immediate area.

No archaeological sites were identified during this investigation and no additional management activities are recommended. This study did not incorporate any underwater archaeological investigations of either the Back or the Cooper River crossings. There is always the possibility that additional resources may be identified during construction. Crews should be made aware that if pottery, arrowheads, concentrations of bricks, or the presence of bones are found in the project area, ground disturbing work should be suspended until the finds can be assessed by either the project archaeologist or the State Historic Preservation Office.

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INTRODUCTION

The investigation of the proposed sewer line corridor was conducted by Dr. Michael Trinkley of Chicora Foundation, Inc. for Mr. Mark Principe of Sabine & Waters. The 50 feet wide, approximately 4.5 mile long corridor is located east of Goose Creek in Berkeley County (Figure 1).

The corridor begins at the Berkeley County Water and Sanitation Authority's treatment facility on the north side of Red Bank Road and runs at the edge of the road right-of-way for about 9,000 feet to the south side of the Back River Crossing (Figure 2). In this area the topography is generally rolling and, in some areas, steeply sloping. The road edge has been extensively used, and includes two separate powerline rights-of-way as well as a buried natural gas pipeline. The surface has been extensively sculpted not only by the ditches for the roadway, but also by the recent addition of a jogging/bike path (Figure 3).

North of the marsh associated with the Back River, the corridor continues on the west side of Red Bank Road. For about 10,500 feet it continues over areas that are generally level, but low, often revealing standing water and small creek inlets. This section, however, has also been extensively used. Two, and sometimes as many as three, overhead utility lines have been constructed along the road edge. The underground natural gas pipeline also continues in this area (Figure 4).

Opposite the north edge of the Bayer (formerly Mobay) property, the corridor crosses Red Bank Road and enters dense woods, running within 20 feet of the property line (which itself is a large ditch with flowing water). The soils in this area are wet and the topography is generally low. There is evidence of previous cultivation, with the soils mounded for drainage. At the time of the survey there were frequent areas of standing water (Figure 5).

The corridor will be used to construct a

force main sewer system. Some landscape alteration, such as clearing and grubbing of vegetation, along with excavation, will occur. We expect that this work will have the potential to cause considerable damage to the ground surface and any archaeological remains which may be present.

Chicora was requested to submit a budgetary proposal for an intensive survey by Mr. Mark Principe of Sabine & Waters on March 14, 1997. A proposal was submitted on March 18, 1997 and accepted the following week.

The statewide archaeological site files held by the South Carolina Institute of Archaeology and Anthropology were examined by Ms. Rachel Brinson-Marrs on March 24 for information pertinent to the project area. Although there were several in the general area, none were recorded on or adjacent to the proposed corridor.

In addition, the South Carolina Department of Archives and History was contacted on March 24 concerning any sites which might appear on their master topographic maps, as well as the location of any National Register of Historic Places buildings, districts, structures, sites, or objects in the project area. No architectural surveys were available for the immediate area and no National Register sites were presents in the project corridor, although the Otranto Plantation Indigo Vats are situated across Red Bank Road, in the Bayer parking lot, from the proposed undertaking (Dr. Tracy Power, personal communication 1997).

The initial phase of the field investigations were conducted on March 26 by Dr. Michael Trinkley. This survey included the area from the Berkeley County Water and Sanitation Authority facility on Red Bank Road east and north to the Bayer property. We were not, however, able of obtain assess to the last segment of the tract, through the Bayer plant. This final leg of the

ARCHAEOLOGICAL SURVEY OF THE PROPOSED BERKELEY COUNTY SEWER LINE



Figure 1. Project vicinity in Berkeley County, South Carolina (basemap is USGS South Carolina 1:500,000).

INTRODUCTION

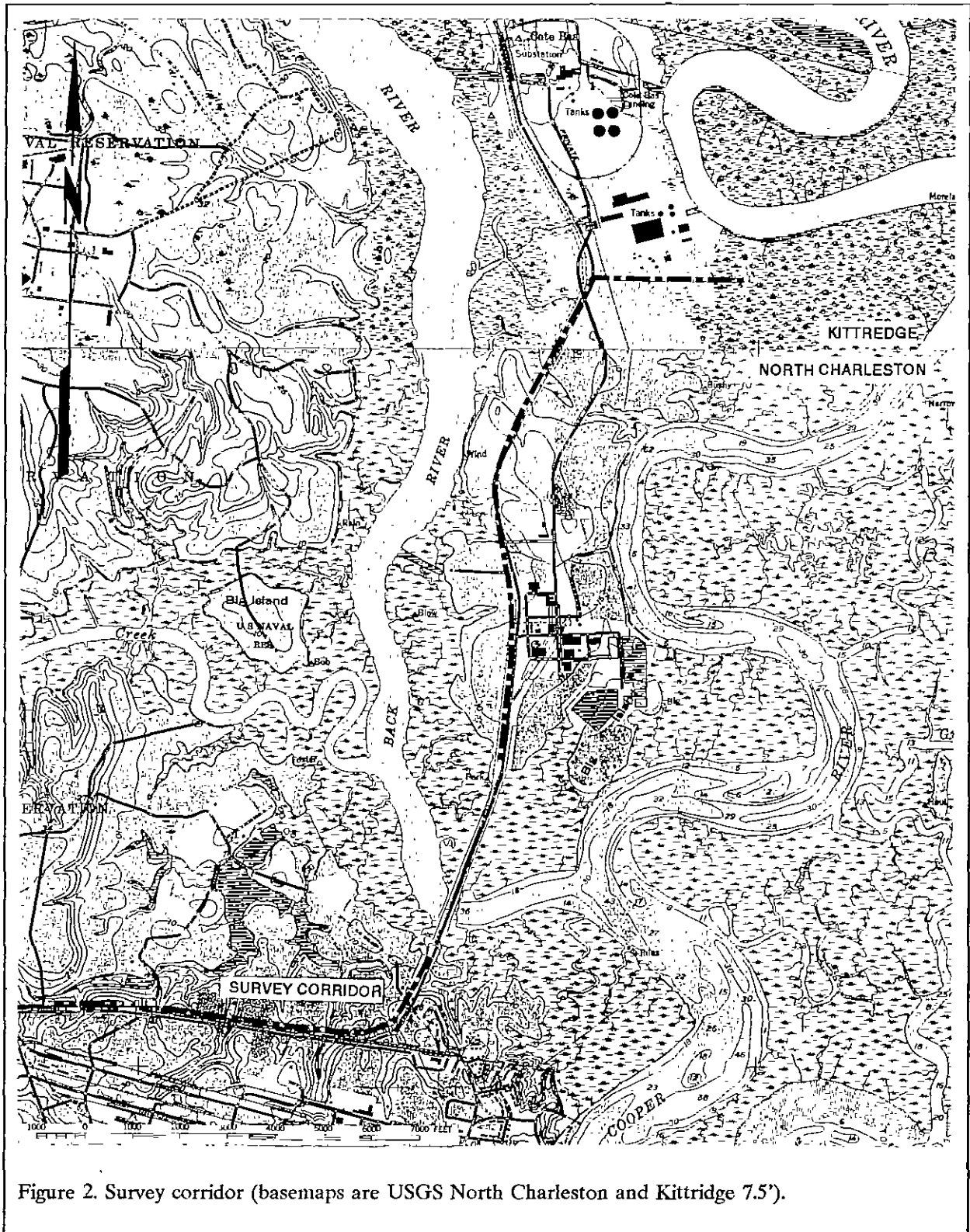


Figure 2. Survey corridor (basemaps are USGS North Charleston and Kittridge 7.5').



Figure 3. Survey corridor along north side of Red Bank Road, just east of the sewer facility, looking east.



Figure 4. Survey corridor west of Red Bank Road north of the Back River Crossing, looking north.

INTRODUCTION

survey was completed on April 30, 1997. The field investigations required a total of 9 person hours. As no archaeological sites were recorded, no laboratory processing was required. This report production was conducted at Chicora's laboratories in Columbia, South Carolina on May 2, 1997.



Figure 5. Cut line running east through the Bayer property.

ENVIRONMENTAL BACKGROUND

Berkeley County is situated in the lower Atlantic Coastal Plain of South Carolina. Containing about 1,100 square miles, it is bordered by Georgetown County to the northeast, Charleston County to the southeast and southwest, Dorchester County to the west, Orangeburg County to the northwest, and Clarendon and Williamsburg counties to the north.

The topography of the country is characterized by subtle undulation characteristic of beach ridge plains. The elevations range from sea level to approximately 105 feet above mean sea level (AMSL). In the vicinity of the corridor the elevations range from about 5 to 30 feet AMSL. The topography is generally level although somewhat more rolling near the swamp drainages. The topography is especially rolling along the first leg of the corridor, as it runs along the edge of an east-west sand ridge broken by a number of small drainages (see Figure 2).

Berkeley is drained by three significant river systems: the Santee, Wando, and Cooper rivers. The Santee has a large freshwater discharge and forms the northern boundary with neighboring Georgetown County. The Wando is a coastal river, being dominated by tidal action. The Cooper River, which flows through the center of the County, was also originally a tidal river, but it has been modified by a large volume of fresh water diverted from the Santee through Lakes Marion and Moultrie. In addition, there are a number of broad, low-gradient interior drainages that are present either as extensions of tidal streams or flooded bays and swales.

Significant drainages in the corridor are those feeding Back River on the southern end of the project. Many of these are found in the project area, especially along the first leg of the study, east of the existing Berkeley County Water and Sanitation Authority treatment plant.

As previously mentioned, Berkeley County is made up of one broad physiographic area, often called the lower Atlantic Coastal Plain or the Atlantic Coast Flatwoods. The surface soils are almost entirely sedimentary and were transported into the area from elsewhere. The geology of Berkeley County is characteristic of the region; the formations covering the surface date from the Pleistocene and include sands, clays, gravels, and phosphates.

In general the soils in lower Berkeley are part of the Wahee-Duplin-Lenoir association. They tend to be somewhat poorly to moderately well drained and have a loamy surface layer with a clayey subsoil. There are five primary soil series in the section of the project from the existing treatment facility to the Back River: Bethera loams, Bonneau loamy sands, Caroline fine sandy loams, Craven loams, and Duplin fine sandy loams. All but the Bethera loams are found on 2 to 6% slopes, fairly steep for the Berkeley area. Likewise, all but the Bethera soils (which are poorly drained and have a seasonal water table within the upper foot of the surface) are moderately well drained. Also present in this segment of the study area are several fairly large borrow pits.

From the Back River to the Cooper River there are four primary soil series: Duplin fine sandy loams, Lenoir fine sandy loams, Meggett loams, and Wahee loams. The Duplin soils, which are moderately well drained, are found in only one small area, extending about 800 feet. The remainder of corridor consists of the other three series, all of which range from somewhat poorly drained to poorly drained. The Lenoir soils have a seasonal water table from 1.0 to 2.5 feet below the ground surface, while the Meggett and Wahee soils have seasonal water tables from 0 to 1.5 feet below the surface. In general, these areas can be characterized as poorly drained with very slow permeability (see Long 1980: Map Sheets 88 and 92).

Berkeley County has a subtropical climate, characterized by warm summers, mild winters, and adequate precipitation fairly evenly spread throughout the year. Except in the summer, when maritime tropical air controls the climate of the area, the daily weather patterns are controlled by west to east moving pressure systems and associated fronts.

Yearly precipitation averages 47 inches, but ranges from 39 to 55 inches. The growing season, from April to September, receives an average of 31 inches or about 66% of the yearly total. The average length of the freeze-free growing season is approximately 260 days, although frosts can occur as early as October 26 and as late as April 15 (Long 1980:46).

Mills remarked in 1826 that Carolina was similar to European climates, lying at a similar latitude. He noted that:

in comparing the climate of South Carolina, with similar climates in Europe, we find it lying under the same atmospheric influences with Aix, Rochelle, Montpellier, Lyons, Bordeaux, and other parts of France; with Milan, Turin, Padua, Mantua, and other parts of Italy (Mills 1972 [1826]:133).

The coastal region is a moderately high risk zone for tropical storms, with 169 hurricanes being documented from 1686 to 1972 (0.59 per year) (Mathews et al. 1980:56). One of the most devastating in the eighteenth century was the hurricane of September 15, 1752. One report listed 92 people drowned, although the death toll, especially among the African American slaves was likely much higher. The storm also had considerable long-term effects and Calhoun notes that:

the destruction of trees was severe; one plantation owner's loss was assessed at \$50,000 and many of those trees which survived were "heart-shaken," and unfit for use. Crops were even

more damaged as the storm followed a severe drought. It was necessary to enact laws to regulate the exportation and sale of corn, "Peafe," and small rice, so that "the poor may be able to purchase Provisions at a moderate Price" (Calhoun 1983:9).

Speaking of the coastal plain Braun observed that:

the vegetation of this region is in part warm temperate-subtropical, in part distinctively coastal plain, and in part temperate deciduous. It is made up of widely different forest communities - coniferous, mixed coniferous and hardwood, deciduous hardwood, and mixed deciduous and broad-leaved evergreen hardwood - interrupted here and there by swamps, bogs, and prairies. The large number of unlike communities is related to the diverse environmental conditions of the region (Braun 1974:282)

Indeed, an examination of the region around Berkeley County reveals tremendous diversity. One detailed study revealed a mosaic including the oak-hickory-pine forest common to upland areas, oak-gum-bald cypress forest typical of the southern floodplains, pine forests found in mesic to xeric upland sites, mesophytic broadleaved forests on more mesic slope sites, old rice fields, and a variety of swamp forests such as the tupelo-cypress, low hardwood, and ridge hardwoods (Federal Power Commission 1977). All of these forest types have different dominants and different understory vegetation (see Barry 1980).

PREHISTORIC AND HISTORIC SYNOPSIS

Prehistoric Synopsis

The Paleo-Indian period, lasting from 12,000 to 8,000 B.C., is evidenced by basally thinned, side-notched projectile points; fluted, lanceolate projectile points, side scrapers, end scrapers; and drills (Coe 1964; Michie 1977; Williams 1968). The Paleo-Indian occupation, while widespread, does not appear to have been intensive. Artifacts are most frequently found along major river drainages, which Michie interprets to support the concept of an economy "oriented towards the exploitation of now extinct mega-fauna" (Michie 1977:124).

Unfortunately, little is known about Paleo-Indian subsistence strategies, settlement systems, or social organization. Generally, archaeologists agree that the Paleo-Indian groups were at a band level of society (see Service 1966), were nomadic, and were both hunters and foragers. While population density, based on the isolated finds, is thought to have been low, Walthall suggests that toward the end of the period, "there was an increase in population density and in territoriality and that a number of new resource areas were beginning to be exploited" (Walthall 1980:30).

The Archaic period, which dates from 8000 to 2000 B.C., does not form a sharp break with the Paleo-Indian period, but is a slow transition characterized by a modern climate and an increase in the diversity of material culture. Associated with this is a reliance on a broad spectrum of small mammals, although the white tailed deer was likely the most commonly exploited mammal. The chronology established by Coe (1964) for the North Carolina Piedmont may be applied with little modification to the South Carolina coastal plain and piedmont. Archaic period assemblages, exemplified by corner-notched and broad-stem projectile points, are fairly

common, perhaps because the swamps and drainages offered especially attractive ecotones.

In the Coastal Plain of the South Carolina there is an increase in the quantity of Early Archaic remains, probably associated with an increase in population and associated increase in the intensity of occupation. While Hardaway and Dalton points are typically found as isolated specimens along riverine environments, remains from the following Palmer phase are not only more common, but are also found in both riverine and interriversine settings. Kirks are likewise common in the coastal plain (Goodyear et al. 1979).

The two primary Middle Archaic phases found in the coastal plain are the Morrow Mountain and Guilford (the Stanly and Halifax complexes identified by Coe are rarely encountered). Our best information on the Middle Woodland comes from sites investigated west of the Appalachian Mountains, such as the work in the Little Tennessee River Valley. The work at Middle Archaic river valley sites, with their evidence of a diverse floral and faunal subsistence base, seems to stand in stark contrast to Caldwell's Middle Archaic "Old Quartz Industry" of Georgia and South Carolina, where axes, choppers, and ground and polished stone tools are very rare.

The Late Archaic is characterized by the appearance of large, square stemmed Savannah River projectile points (Coe 1964). These people continued the intensive exploitation of the uplands much like earlier Archaic groups. The bulk of our data for this period, however, comes from work in the Uwharrie region of North Carolina.

The Woodland period begins by definition with the introduction of fired clay pottery about 2000 B.C. along the South Carolina coast (the introduction of pottery, and hence the beginning of the Woodland period, occurs much later in the

Piedmont of South Carolina). It should be noted that many researchers call the period from about 2500 to 1000 B.C. the Late Archaic because of a perceived continuation of the Archaic lifestyle in spite of the manufacture of pottery. Regardless of terminology, the period from 2500 to 1000 B.C. is well documented on the South Carolina coast and is characterized by Stallings (fiber-tempered) pottery (see Figure 11 for a synopsis of Woodland phases and pottery designations). The subsistence economy during this early period was based primarily on deer hunting and fishing, with supplemental inclusions of small mammals, birds, reptiles, and shellfish.

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.

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.

The Deptford phase, which dates from 1100 B.C. to A.D. 600, is best characterized by fine to coarse sandy paste pottery with a check stamped surface treatment. The Deptford settlement pattern involves both coastal and inland sites.

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 1980b). 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. 1990:96-98).

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 (1976). The Deep Creek wares date from about 1000 B.C. to A.D. 1 in North Carolina, but may date later in South Carolina. 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.

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. 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

PREHISTORIC AND HISTORIC SYNOPSIS

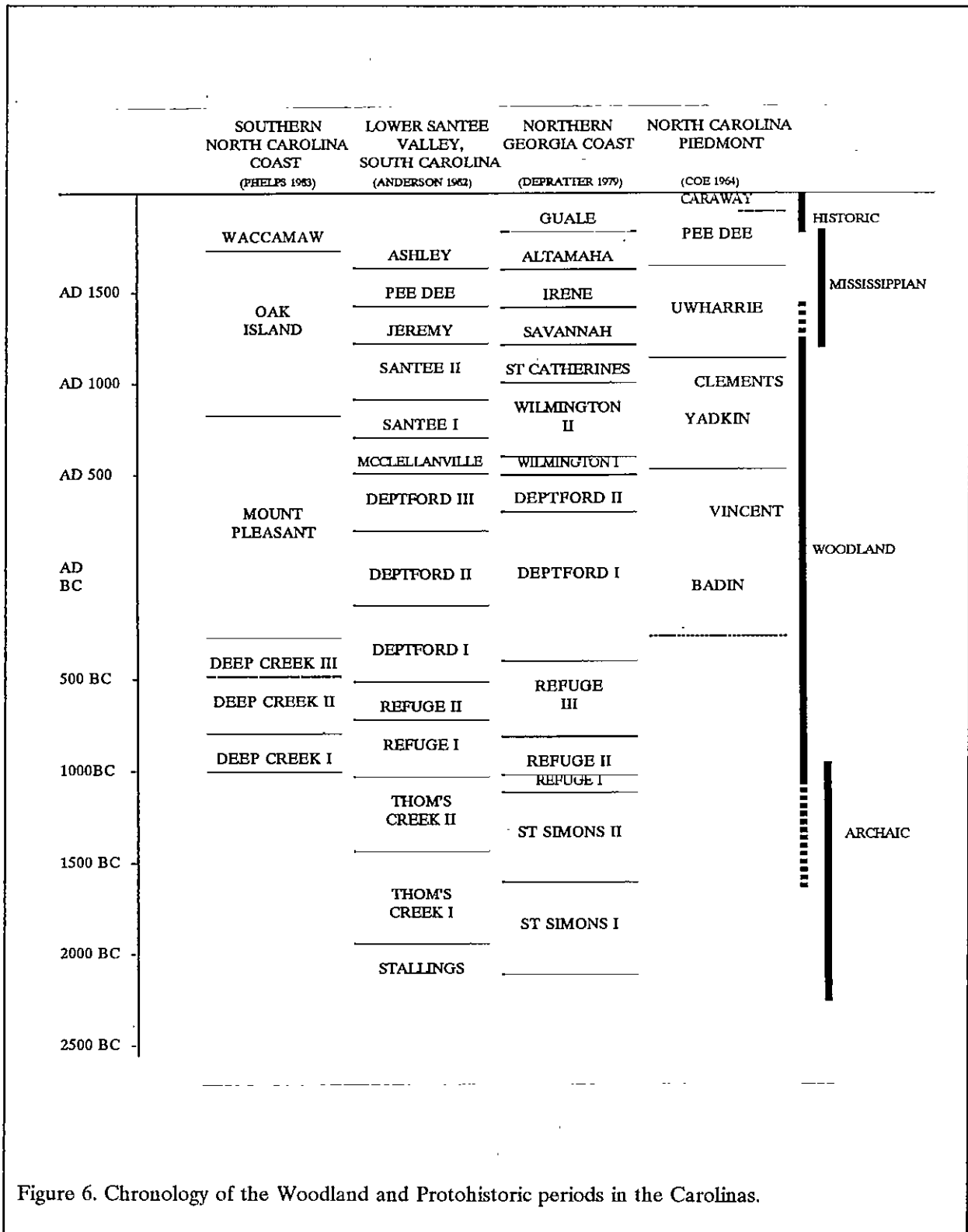


Figure 6. Chronology of the Woodland and Protohistoric periods in the Carolinas.

points (Coe 1964:110-111), sandstone abraders, shell pendants, polished stone gorgets, celts, and woven marsh mats. Significantly, both primary inhumations and cremations are found.

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. Research at 38FL249 on the Roche Carolina tract in northern Florence County revealed an assemblage including Badiu, Yadkin, and Wilmington wares (Trinkley et al. 1993:85-102). Anderson et al. (1982:299-302) offer additional typological assessments of the Yadkin wares in South Carolina.

Over the years the suggestion that Cape Fear might be replaced by such types as Deep Creek and Mount Pleasant has raised considerable controversy. Taylor, for example, rejects the use of the North Carolina types in favor of those developed by Anderson et al. (1982) from their work at Mattassee Lake in Berkeley County (Taylor 1984:80). Cable (1991) is even less generous in his denouncement of ceramic constructs developed nearly a decade ago, also favoring adoption of the Mattassee Lake typology and chronology. This construct, recognizing five phases (Deptford I - III, McClellanville, and Santee I), uses a type variety system.

Regardless of terminology, 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 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. 1990:14-15). This situation would remain unchanged until the development of the South Appalachian Mississippian complex (see Ferguson 1971).

The South Appalachian Mississippian Period (ca. A.D. 1100 to 1640) is the most elaborate level of culture attained by the native inhabitants and is followed by cultural disintegration brought about largely by European disease. The period is characterized by complicated stamped pottery, complex social organization, agriculture, and the construction of temple mounds and ceremonial centers. The earliest phases include the Savannah and Pee Dee (A.D. 1200 to 1550).

Historic Overview

The English established the first permanent settlement in what is today South Carolina in 1670 on the west bank of the Ashley River. Like other European powers, the English were lured to "new World" for reasons other than the acquisitions of land and promotion of agriculture. The Lords Proprietors, who owned the colony until 1719-1720, intended to discover a staple crop whose marketing would provide great wealth through the

By 1680 the settlers of Albermarle Point had moved their village across the bay to the tip of the peninsula formed by the Ashley and Cooper rivers. This new settlement at Oyster Point would become modern-day Charleston. The move provided not only a more healthful climate and an area of better defense, but:

the situation of this Town is so convenient for public Commerce that it rather seems to be the design of some skillful Artist than the accidental position of nature (Mathews 1954:153).

The early settlers of the Carolina colony came from other mainland colonies, England, and the European continent. But the future of Carolina was largely directed by the large number of colonists from the English West Indies. This Caribbean connection has been discussed by Waterhouse (1975), who argues that the Caribbean immigrants were largely from old families of economic and political prominence which formed the Barbados élite. Waterhouse observes that while elsewhere in the American colonies the early settled families were displaced from their established positions of power and economic superiority by newcomers, this did not occur in South Carolina. In Carolina:

a relatively large proportion of those who, in the middle of the eighteenth century, were among the wealthier inhabitants, were descended from those families who had arrived in the colony during the first twenty years of its settlement (Waterhouse 1975:280).

This immigration turned out to be a significant factor in the stability and longevity of South Carolina's colonial élite. It also firmly established the foundations of slavery and cash crop plantations.

Many of these Barbadian immigrants settled in the Goose Creek area, forming one of the most influential political and economic groups

in the colony (Stoney 1938:19). The "Goose Creek Men" included individuals such as Maurice Mathews, James Moore and John Boone. They favored increased Indian slavery, trade with the pirates or privateers that sailed the Carolina coast, and generally ignored the efforts of the Lords Proprietors to control the Colony's economic and political future. While the political power of the Goose Creek faction peaked in the 1720s, it continued to evidence considerable economic power well into the late 1740s (see Morgan 1980; Sirmans 1966).

Early agricultural experiments which involved olives, grapes, silkworms, and oranges were less than successful. While the Indian trade was profitable to many of the Carolina colonies, it did not provide the Proprietors with the wealth they were expected from the new colony. This trade was also limited since the Indian population was so dramatically reduced by European disease, the sale of alcohol, and slavery.

Cattle raising also was an easy way to exploit the region's land and resources, offering a relatively secure return for very little capital investment. Few slaves were necessary to manage the herd. The mild climate of the low country made winter forage more abundant and winter shelters unnecessary. The salt marshes on the coast, useless for other purposes, provided excellent grazing and eliminated the need to provide salt licks. More interior swamps found similar vegetation and provided a constant water supply (Coon 1972; Dunbar 1961). Production of cattle, hogs, and sheep quickly outstripped local consumption and by the early eighteenth century beef and pork were principal exports of the Colony to the West Indies (Ver Steeg 1975:114-116). This allowed the ties between Carolina and the Caribbean to remain strong, and provided essential provisions to the large scale, single crop plantations.

Rice and indigo both competed for the attention of Carolina planters. Although introduced at least by the 1690s, rice did not become a significant staple crop until the early eighteenth century. At that time it not only provided the Proprietors with the economic base

the mercantile system required, but it was also to form the basis of South Carolina's plantation system -- slavery.

South Carolina's economic development during the pre-Revolutionary War period involved a complex web of interactions between slaves, planters, and merchants. By 1710 slaves were starting to be concentrated on a few, large slave-holding plantations. By the close of the eighteenth century some South Carolina plantations had a ratio of slaves to whites that was 27:1 (Morgan 1977). And by the end of the century over half of eastern South Carolina's white population held slaves. With slavery came, to many, unbelievable wealth. Coclanis notes that:

on the eve of the American Revolution, the white population of the low country was by far the richest single group in British North America. With the area's wealth based largely on the expropriation by whites of the golden rice and blue dye produced by black slaves, the Carolina low country had by 1774 reached a level of aggregate wealth greater than that in many parts of the world even today. The evolution of Charleston, the center of the low-country civilization, reflected not only the growing wealth of the area but also its spirit and soul (Coclanis 1989:7).

Only certain areas of the low country, however, were suitable for rice production. During the early years rice was grown as an upland crop, in small fields adjacent to freshwater streams where water could be easily impounded and applied to the crop. By the early 1700s planters found that upland swamps, such as those in the Goose Creek area, were even better suited for rice, although the soils were quickly exhausted (Meriwether 1940; Sellers 1934). These upland swamps, distinct from well-drained uplands, remained the focus of Carolina rice agriculture during the entire Colonial period.

Hewat, writing in 1779, describes the process of upland swamp rice cultivation:

after the planter has obtained his tract of land, and built a house upon it, he then begins to clear his field of that load of wood with which the land is covered. Having cleared his field, he next surrounds it with a wooded fence, to exclude all hogs, sheep, and cattle from it. This field he plants with rice . . . year after year, until the lands are exhausted, or yield not a crop sufficient to answer his expectations. Then it is forsaken, and a fresh spot of land is cleared and planted, with is also treated in like manner, and in succession forsaken and neglected (Hewat 1836:514).

This rather simplistic commentary failed to observe the engineering feat that upland swamp rice cultivation really was. Clearing, which alone was a monumental undertaking, was followed by the construction of dams, dikes, and trenches. By one estimate, a 500 acre rice field required 60 miles of dikes and ditches (Gunn 1976:1-16). Fields were carefully leveled to ensure that they could be completely covered by water. Rice was planted during two periods -- March 10 to April 10 and June 1 to June 10 -- avoiding May since vast migrations of "rice birds" passed through the state during that period and could destroy a crop. Rice was harvested in late August.

By 1730 the majority of the population of the colony, both rural and urban, was black (Wood 1974). By 1850, 46% of Charleston District's population (which included today's Berkeley County) consisted of African American slaves (DeBow 1854:302), although Hilliard (1984:37) indicates that more than 60% of the Charleston slaveholders by 1860 owned fewer than 10 slaves. Regardless, there remained vast plantations where the owner's wealth was achieved by the labor of black slaves.

During the eighteenth century the profits

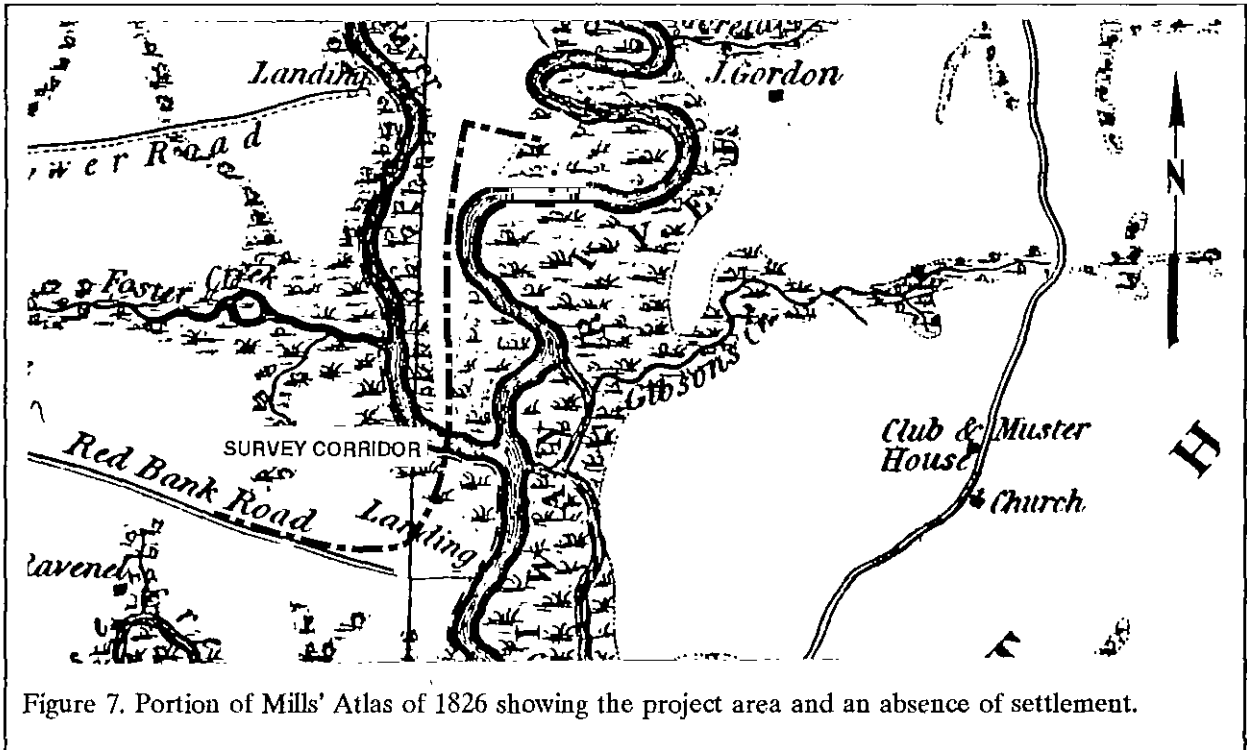


Figure 7. Portion of Mills' Atlas of 1826 showing the project area and an absence of settlement.

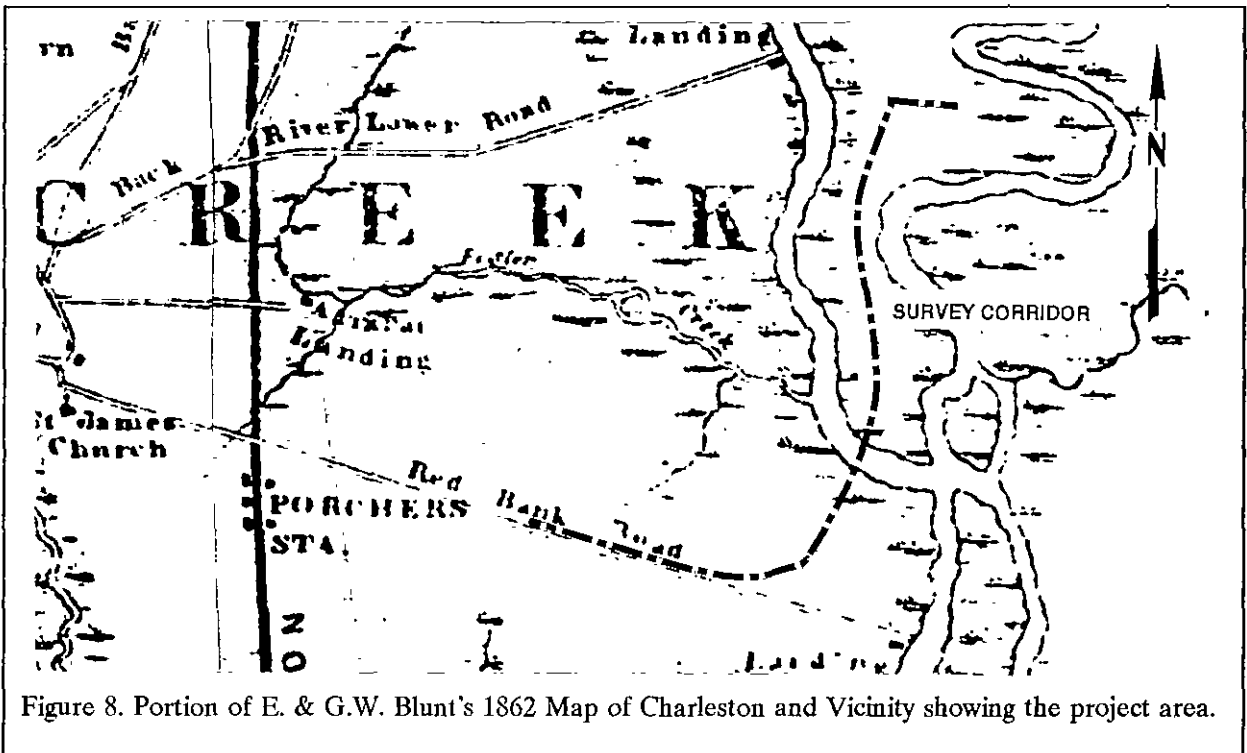


Figure 8. Portion of E. & G.W. Blunt's 1862 Map of Charleston and Vicinity showing the project area.

to be gained from rice were extraordinary, ranging from a 12% to nearly 28% net return on the investment, well exceeding other cash crops, such as tobacco or indigo (see Coclanis 1989:141). Charleston was the mecca around which the economic, political, and social world of Carolina revolved. Charleston provided the essential opportunity for conspicuous consumption, a mechanism which allowed the display of wealth accumulated from the plantation system.

By the end of the eighteenth century, beginning of the nineteenth century, the rate of return on rice had been reduced, at best, to about 2%, and many years the rate of return was a staggering -3% to -7%. In 1859, just before the Civil War, the return is reported to have been -28%. As Coclanis observes:

the economy of the South Carolina low country collapsed in the nineteenth century. Collapse did not come suddenly - many feel, for example, that the area's "golden age" lasted until about 1820 - but come it did nonetheless. By the late nineteenth century it was clear that the forces responsible for the area's earlier dynamism had been routed, the dark victory of economic stagnation virtually complete (Coclanis 1989:111).

Mills' Atlas shows several taverns in the vicinity of the project area. It appears that these taverns are located adjacent to what is now U.S. Highway 52 and U.S. Highway 176 (Figure 2).

Previous archaeological investigations in Berkeley County consist of a number of surveys including the work by Brooks and Scurry (1979) at the Amoco Realty property. Excavations at prehistoric sites in the county are few. Most notable are the works by Anderson et al (1982) and Brooks and Canout (1984). Trinkley (1980a; 1990) provides a synthesis of Coastal Plain Woodland Period occupation. This previous research has shown that prehistoric sites in the region tend to be located on elevated, well drained

soils, or near the margins of swamps.

Previous Investigations

This general overview should be supplemented by review of the more detailed work which has been conducted in this area. Most notable are the studies of the Charleston Naval Weapons Station (Brockington et al. 1995 and Grover 1997), which provide considerable information on the archaeology and history of the general region.

In addition, these studies likely included some portions of the current corridor. Brockington et al. (1995) recorded one site west of the corridor, adjacent to the Back River, 38BK1700. This site is a curious scatter of brick rubble tested by three shovel tests. Associated with only a single prehistoric sherd, the site was recommended not eligible.

Another survey in the project area was conducted by the South Carolina Institute of Archaeology and Anthropology in 1977 at the location of the proposed Bushy Park Sewage Treatment facility on the Naval Weapons Station. Although the research was not formally published, it did produce two sites, 38BK247 and 38BK248. Both were found eroding from borrow pits next to the swamp margin and consisted of flakes or pottery (38BK247 and 38BK248 site forms, South Carolina Institute of Archaeology and Anthropology site files).

A reconnaissance survey of another proposed sewage treatment facility was conducted in 1978 (Lees and Michie 1978). This project was also in the vicinity of the current study and resulted in the identification of two archaeological sites, identified in the report as 38BK118 and 38BK119. Unfortunately, no site forms were ever filed by these researchers and one number, 38BK119 was assigned to another site, in another part of the county. This site has since been renumbered 38BK1779 (Keith Derting, personal communication 1997).

Site 38BK118 is especially interesting since it appears to represent a late eighteenth and early

nineteenth century plantation building, much of which was standing at the time of the survey. The other site, now recorded as 38BK1779, is a scatter of prehistoric pottery, again situated on a sandy ridge overlooking the marsh.

In 1988 Preservation Consultants nominated the Otranto Plantation Indigo Vats for inclusion on the National Register of Historic Places, with the vats eventually being accepted to the register in 1989. This structure consists of two brick indigo vats which had been found in a nearby residential and industrial area and were moved to their present location. The original site had been completely destroyed by the time of the nomination. These indigo vats are likely the only such features still in existence in South Carolina. At the time of the nomination, the vats were located:

in a wooded area outside the entrance to an industrial facility. A small landscaped park, lying between two surface parking lots, surrounds the structures (South Caroling Department of Archives and History, National Register nomination for the Otranto Plantation Indigo Vats).

Today, the "wooded area" and "small landscaped park" are no longer present and the vats are situated in a small area of concrete outside the Bayer Employee Credit Union. There is evidence that little maintenance has been conducted on the vats since they were originally installed. There is evidence of extensive wood rot in the timber members, as well as cracking in the brickwork.

Given the attention to these resources and their current surroundings, it seems unlikely that the proposed sewer construction will have any physical or aesthetic impact.

Brooks and Scurry (1979) found that the bulk of the sites components in the general area will be Middle to Late Woodland, since the high sea level stands during these periods are thought to have restricted the dispersion of resources such as

large mammals and forest products. Also, sites are expected to be small and exhibit low artifact diversity since the use of extractive sites is brief, the sites represent a narrow range of activities, and group size was small. A reconnaissance survey of Mt. Holly Plantation by Poplin et al. (1978) located few prehistoric sites. Poplin et al. (1978:18) believed that the poor quality of soils in the area may have attributed to the low density of occupation. Based on the locations of prehistoric sites on the Crowfield development tract, Elliot (1987) concluded that freshwater swamp and swamp margin resources were the main attraction resulting in settlement adjacent to the swamp.

For historic sites, South and Hartley (1980) found plantations to be located on high ground adjacent to deep water. This type of topography does not exist in the survey area which is characterized by small swamp creeks. However, the survey of portions of Mt. Holly Plantation (Poplin et al. 1978) and the Crowfield development tract (Elliot 1987), both located nearby, revealed that plantations are generally found on terrace edges adjacent to the swamps where the inland swamp rice would have been grown.

Because of the presence of large areas of poorly drained soils located away from major swamps or creeks, much of the project area was believed to have a relatively low potential for containing both historic and prehistoric archaeological sites.

METHODS AND FINDINGS

Methods

The initially proposed field techniques involved the placement of shovel tests at 100 to 200 foot intervals, dependent on topography and soil conditions, within the proposed corridor. The interval would depend on the field assessment — if the topography was gentle and there was relatively little indication of modern disturbances, tests would be conducted at 100-foot intervals. If, on the other hand, areas of steep slopes were encountered, or if the shovel testing revealed disturbed soils, or if the visual inspection revealed extensive development, then the test interval would be increased to 200 feet (or possibly greater).

All fill from shovel tests would be screened through ¼-inch mesh, with each test numbered sequentially. Each test would measure about 1 foot square and would normally be taken to a depth of at least 1 foot. All cultural remains would be collected, except for mortar and brick, which would be quantitatively noted in the field and discarded. Notes would be maintained for profiles at any sites encountered.

Should sites (identified as three or more artifacts within a 25 foot diameter) be identified by shovel testing, further tests would be used to obtain data on site boundaries, artifact quantity and diversity, site integrity, and temporal affiliation. The information required for completion of South Carolina Institute of Archaeology and Anthropology site forms would be collected and photographs would be taken, if warranted in the opinion of the field investigator.

The actual field methods did not deviate substantially from those initially proposed. We found that much of the survey corridor, as previously discussed, utilizes an area of heavy previous disturbance. Several previous above ground transmission lines, as well as a below

ground natural gas pipeline follow the same general corridor. In addition, the road-side has been extensively altered by road construction as well as the recent addition of a bike and jogging path. We also found that there were numerous old borrow pits on the road edge, as well as some generally steep slopes.

As a result, the segment of the corridor from the existing treatment facility to the Back River was subjected to a pedestrian survey, with shovel tests placed at approximately 500 foot intervals or where there seemed to be evidence of generally undisturbed soils. This revealed that the previous activities had resulted in very disturbed soil profiles, indicative of extensive excavations and backfilling. No intact soil profiles were encountered.

The segment of the corridor from the Back River northward to the north edge of the Bayer property continued along the road right-of-way and very similar disturbed conditions prevailed. In addition, this segment is also characterized by very poorly drained soils. In most areas the road is elevated. This area was walked, with shovel tests again intuitively placed about every 400 feet, primarily to verify soil conditions. Although we did not encounter evidence of as much disturbance, the soils were consistently wet. Standing water was common.

The final segment of the corridor, running just within the north Bayer property line was shovel tested at 100 and 200 foot intervals. Initially the tests were placed at 100-foot intervals, but within the first 400 feet we found that all of the soils were very wet, often with a water table encountered. As a result, the shovel testing was reduced to 200-foot intervals for the remainder of the corridor. We also discovered that while the property line had been surveyed, there was relatively little effort taken to stake the centerline

of the proposed corridor. Consequently, our survey in this area is approximate. This, however, should not affect the results, since all of the traversed topography was low, wet, and exhibited very poorly drained soils.

As a result of our survey, a total of 45 shovel tests were excavated, although relatively few of these could be screened, the soil was so wet.

Findings

The ditch and associated dike between the Bayer and old General Dynamics property to the north may be an old property boundary, although no trees of any age were associated with the feature. Regardless, it is our understanding that the proposed line will be placed about 20 feet south of this feature, so it should not be affected.

These investigations failed to identify any prehistoric or historic remains and no additional survey or investigations appear warranted.

CONCLUSIONS

The background research for this project failed to identify any known or suspected archaeological sites, although the swamp edge topography slightly further away from the road edge is certainly appropriate for the recovery of prehistoric archaeological sites. Likewise, several areas of the project are known for their colonial and antebellum plantation developments. Tempering this assessment, however, is the documented extent of very poorly drained soils, as well as the extensive roadside development.

The archaeological survey combined pedestrian survey with shovel testing. The roadside areas were tested at intervals of about 500 feet, or where there appeared to be some intact soil. The tests revealed that our concerns regarding the extent of previous damage in this area. In the wooded Bayer tract shovel tests were initially excavated every 100 feet, but this was reduced to 200-foot intervals when it became clear how poorly drained the soils in this area were.

Although sites have been found in this area, they have been situated on sandy bluffs overlooking the marsh and creek — an environmental zone not traversed by the proposed project. Consequently, it is our recommendation that no additional management activities are necessary for this tract once our study is reviewed by the S.C. State Historic Preservation Office.

There remains, of course, the possibility that unrecorded archaeological sites may be identified during the construction of the project. While unlikely, sites might be identified by concentrations of bricks, bottles, pottery, ceramics, arrowheads or other stone tools, flakes, or even bones. Should such remains be found, it is our recommendation that construction be halted and that either Chicora or the State Historic Preservation Office be notified of the finds. This will allow a more complete evaluation.

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