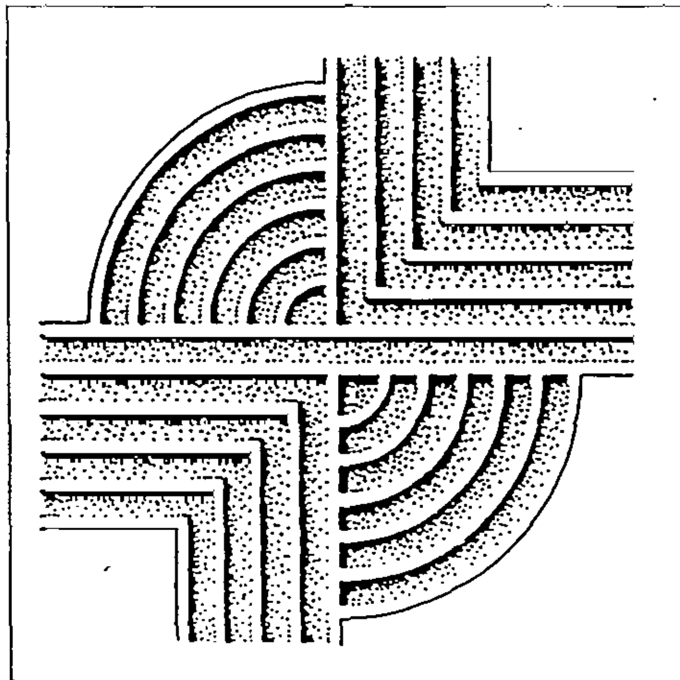
FORT STEWART 12: A SURVEY OF A PORTION OF NATURAL RESOURCE MANAGEMENT UNIT D7.2, FORT STEWART, LIBERTY COUNTY, GEORGIA



CHICORA RESEARCH CONTRIBUTION 300

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FORT STEWART 12: A SURVEY OF A PORTION OF NATURAL RESOURCE MANAGEMENT UNIT D7.2, FORT STEWART, LIBERTY COUNTY, GEORGIA

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Prepared By:
Michael Trinkley
and
Debi Hacker

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Chicora Foundation, Inc.
PO Box 8664
Columbia, SC 29202-8664
803/787-6910
Email: chicora@bellsouth.net
www.chicora.org

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ABSTRACT

This study represents a pedestrian archaeological survey of the Sniper Range on Natural Resource Management Unit D7, and shovel test survey of a portion of Natural Resource Management Unit D7.2 in Liberty County. A total of 322.5 ha were surveyed for this project. The sniper area contains unexploded ordnance and can not be tested using subsurface methods. The scope of work specified that this 93.5 ha area be pedestrian surveyed as high probability using transects spaced at 30 m intervals. Of the remaining tract, 38 ha were specified as requiring high probability survey using transects and shovel tests at 30 m intervals, while 191 ha were specified as needing only low probability survey, using transects at 30 meters, with shovel testing every 50 meters.

This work is being done in order to comply with the National Historic Preservation Act (Public Law 89-665, as amended by Public Law 96-515), Guidelines for Federal Agency Responsibilities, under Section 110 of the National Historic Preservation Act, Army Regulation AR 200-4 (Cultural Resources Management) and 36CFR800 (Protection of Historic and Cultural Properties). The project is administered for the United States Army by the National Park Service (NPS), Southeast Regional Office.

The primary purpose of this investigation is to identify the archaeological remains present on the survey tract at Fort Stewart. These investigations incorporated a review of previously reported site files located at the office of the Cultural Resources Management Specialist (CRMS). No previously recorded sites were located in the survey tracts. A previous survey suggests, however, that some portion of the ca. 1930 Bland Town community, situated at the intersection of F.S. Road 36 and 37D in the Taylors Creek Maintenance Area may extend southward into the current study tract. In addition, the post's Historic Preservation Plan was consulted regarding sites or structures on the National Register of Historic Places within the survey area. Historic maps of the project area were also examined.

One archaeological site (9LI875) and one isolated occurrence (which was also assigned a site number, 9LI874) were identified during the survey of Natural Resource Management Unit D7.2. No archaeological resources were identified in the Sniper Range, which evidenced considerable ground alteration and disturbance. By definition the isolated find is recommended not eligible for inclusion on the National Register. Site 9LI875, although possibly associated with the Bland Town community, is recommended not eligible based on the extent of ground disturbance and the its inability to address significant research questions. As a result, no further management activities are recommended, pending concurrence by the lead agency and the Georgia State Historic Preservation Division.

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We would also like to thank personnel at the Georgia Archaeological Site Files for providing direction concerning the filing of site information and assistance in providing publications related to the background research of this project.

The success of this project is largely due to the dedication and professionalism of the field crew which included Mr. Jason Butler, Ms. Andrea Rombaur, Mr. Van Steen, and Ms. Kate Sullivan. We also want to thank Ms. Rachel Campo, who served as the Field Director for the project. The survey was conducted from November 3 through 12 and November 29 and 30, 1999.

We also wish to express our sympathy to the family and friends of David McKivergan. We appreciated the opportunity to work with him at Fort Stewart and his patience and knowledge will be missed.

INTRODUCTION

Survey Background

These investigations incorporated a portion of Natural Resource Management Unit D7.2 and the adjacent sniper range, all southeast of the Taylor Creek Maintenance Area on Fort Stewart, Georgia. These investigations were conducted by Rachel Campo of Chicora Foundation, Inc. for the National Park Service. This survey tract consists of 322.5 ha. Fort Stewart is located in southeastern Georgia and encompasses portions of Liberty, Long, Tattnall, Evans, and Bryan counties (Figure 1). Training Area D7 is located in the northern portion of Liberty County (Figure 2).

Georgia State Highway 144, which travels east-west, and Georgia State Highway 119, which travels north-south, are the two major highways that run through the post. Intersecting these main roads at various locations within the post are a network of primary and secondary clay or sand roads. The clay based, primary roads provide access to a number of secondary perimeter and firebreak roads, as well as random two-rut vehicle tracts. A number of these roads follow eighteenth and nineteenth century roadbeds, such as Georgia State Highway 144 which follows Hencart Road (or Old Hencart Road).

The survey tract, situated within Training Area D7, is bounded to the northwest by F.S. Road 36, to the northeast by a swamp drainage (a tributary of Canoochee Creek) and a portion of F.S. Road 37D, to the east by F.S. Road 37C, to the south by F.S. Road 37, to the west by F.S. Roads 37A (on the southern edge) and 37D (on the northern edge), and to the northwest by F.S. Road 36 (Figure 3). The high probability survey zone is situated in the northwest corner of the survey tract, separated from the sniper range to the east by a dirt trail and from the low probability survey area to south by F.S. Road 37D. This same road also forms the boundary between the low probability tract to the south and the sniper range tract to the north.

The survey tract features a number of different vegetation types. In the high probability area is among the highest ground in the survey tract, with elevations sloping to the southeast. In the higher areas there are mixed hardwoods and pines, with some low scrub brush and palmettoes. In the lower elevations, especially near the various swamp areas the vegetation is characteristically cypress. Forest margins tend to exhibit dense brush and briars. The sniper range consists primarily of open, grassed range with varying areas of good visibility, ranging up to 50%. The remainder is wooded with pines and a few mixed hardwoods. Along the creek margin the area is swampy with thick underbrush and cypress. In these areas there was no visibility. The range area exhibits heavy use with much land modification. In addition, the range and the areas immediately surrounding the range contain occasional unexploded ordnance.

The high probability survey area, consisting of 38 ha in the northwest corner of the survey tract was surveyed using transects spaced 30 m apart and shovel tests excavated every 30 m. In the low probability tract to the south transects were again spaced at 30 meters, with shovel tests excavated every 50 m. The sniper range was examined using a pedestrian survey with transects spaced at 30 m intervals. Shovel testing was not permitted in this tract due to the presence of unexploded ordnance. Should artifacts be identified during the field survey, an intensive surface collection would be undertaken. A site is defined as a concentration of more than five artifacts in a 20 m diameter area. An isolated find contains five or fewer artifacts in a 20 m diameter area.

Measurements, in compliance with the National Park Service scope of work, were taken using metric units. In order to maintain consistency throughout this research, all measurements are provided

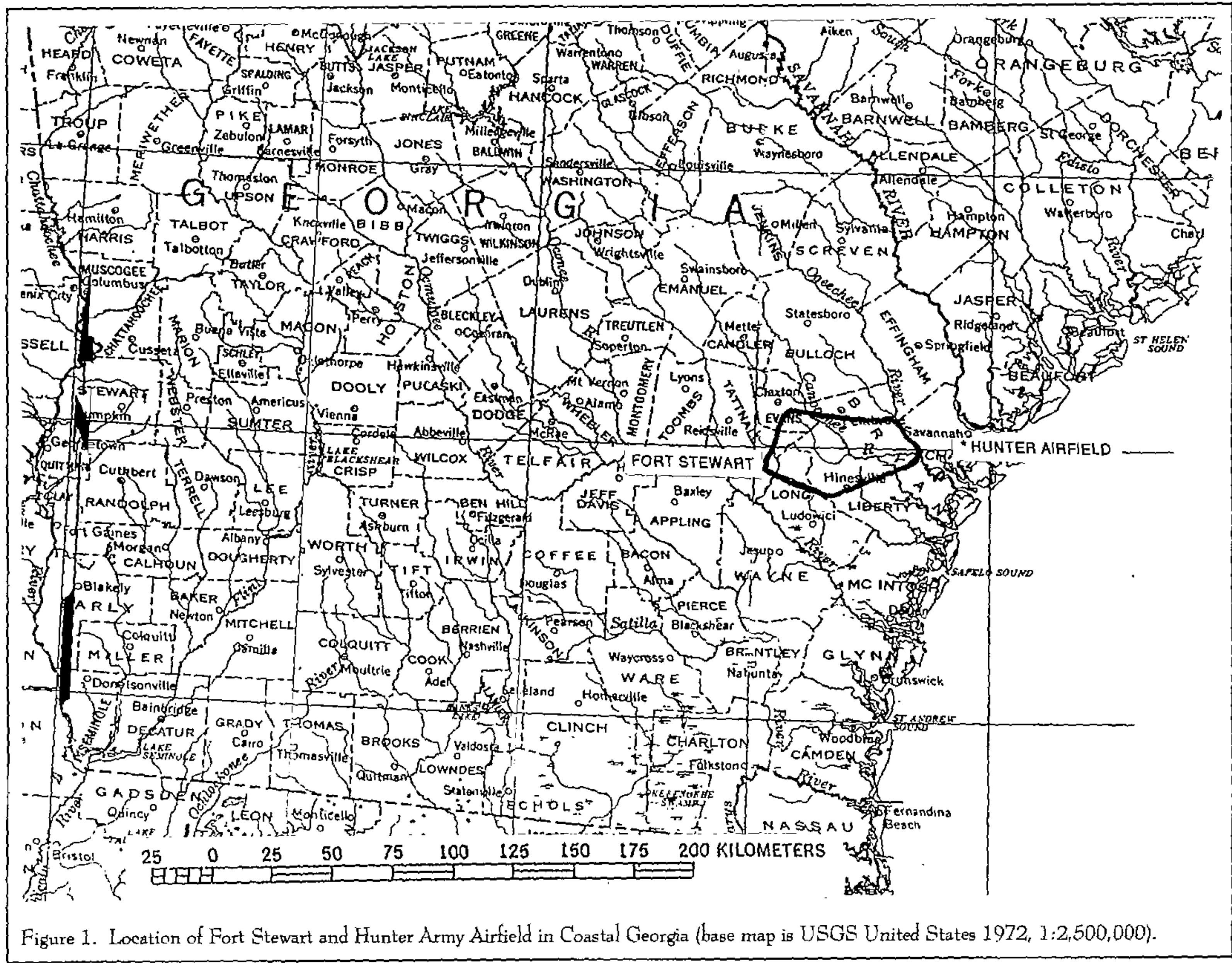

Figure 1. Location of Fort Stewart and Hunter Army Airfield in Coastal Georgia (base map is USGS United States 1972, 1:2,500,000).

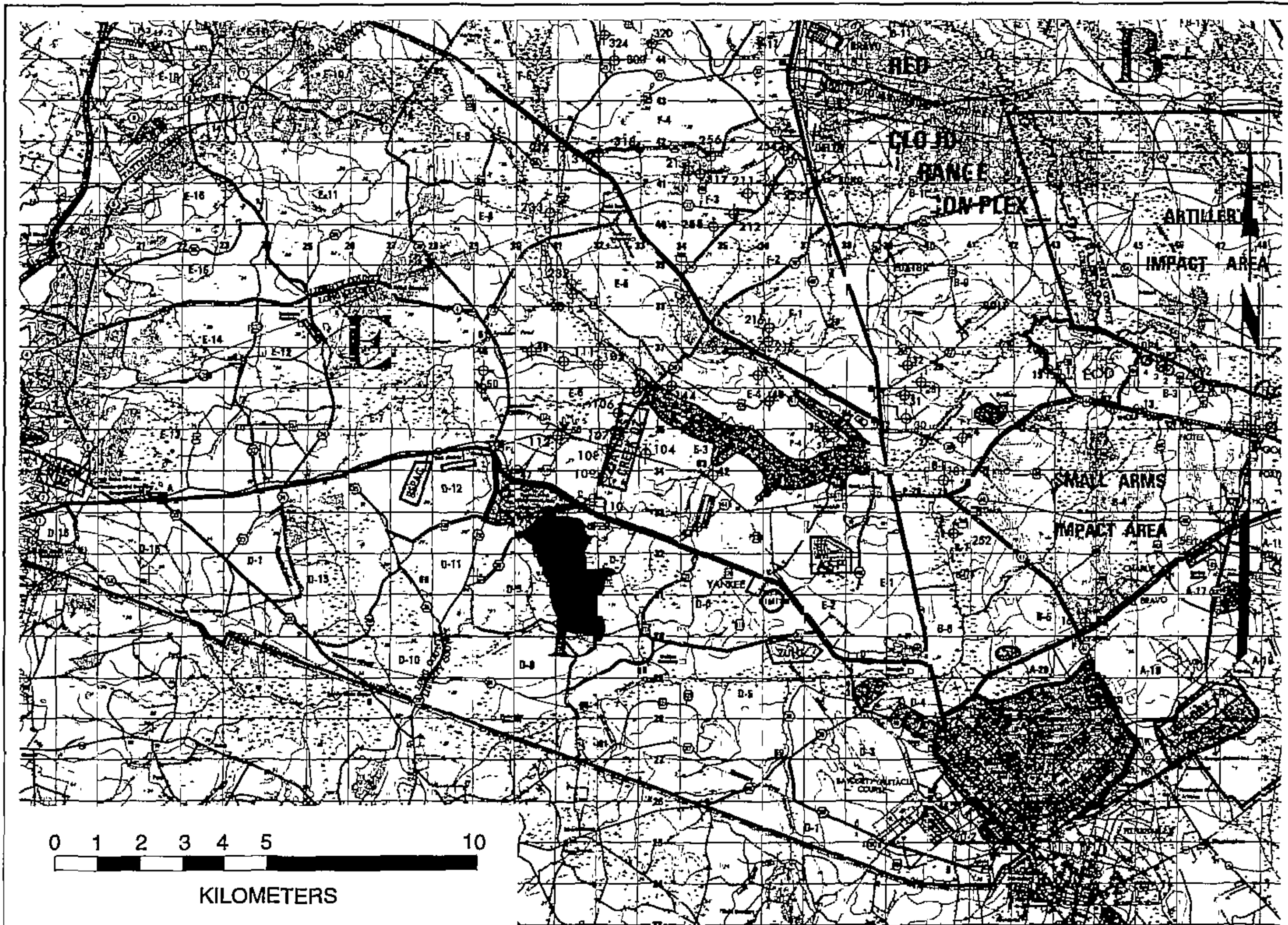

Figure 2. Location of survey tract NRMU D7.2 and the sniper range in Liberty County, Georgia (base map is Fort Stewart Military Installation Map, 1992, 1:50,000).

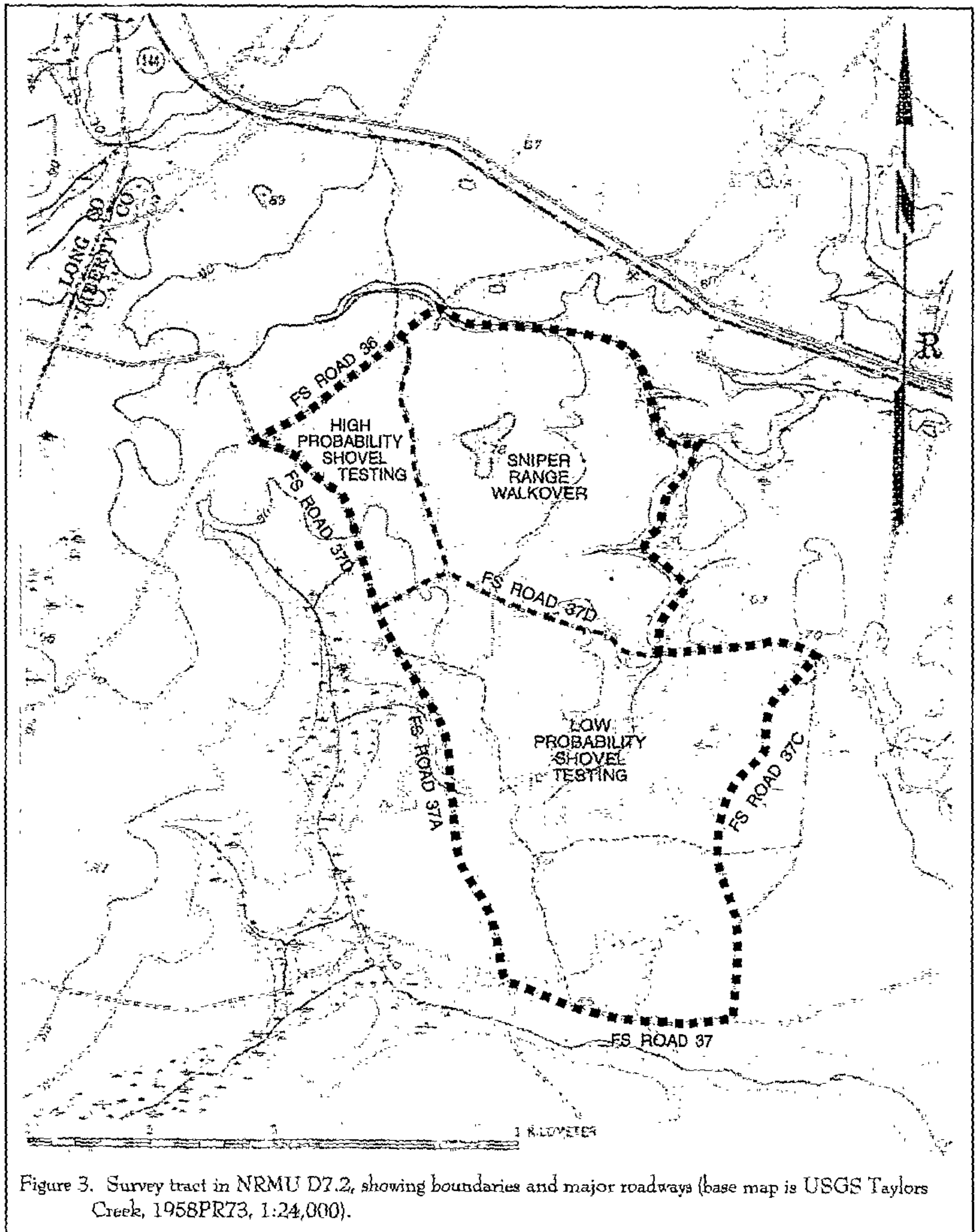

Figure 3. Survey tract in NRMU D7.2, showing boundaries and major roadways (base map is USGS Taylors Creek, 1958PR73, 1:24,000).

Table 1.
Metric Equivalents

LENGTH		
kilometer	km	0.62 miles
meter	m	39.37 inches or 3.28 feet
centimeter	cm	0.39 inches
millimeter	mm	0.04 inches
AREA		
hectare	ha	2.47 acres
square km	km^2	0.3861 square miles
WEIGHT		
metric ton	t	1.1 English tons
TEMPERATURE		
C to F = (C° x 1.8) + 32 = F°		

using metric units and Table 1 provides conversions to English measures. The only exception is the contours on site maps in feet, which are taken from United States Geological Survey maps.

Historic background research was undertaken in Chicora's library. Historic map research was conducted using maps provided by consulting archaeologist Mr. David McKivergan at Fort Stewart. Published reports regarding previous surveys were also consulted. No previously recorded sites were noted for this survey tract. As will be discussed below, we were notified that a previous survey had identified a historic community, Bland Town, at the intersection of F.S. Roads 36 and 37D on the Taylors Creek Maintenance Area to the north of our survey tract (Little et al. 2000:70).

One site and one isolated occurrence were identified in the survey tract — both in the area subjected to the high probability survey. The isolated find (9LI874) is a single white clay pipestem. The one identified site (9LI875) seems to represents the remains of one or more historic structures, possibly associated with the Bland Town community. The materials present are consistent with a ca. 1930 date. The site, however, has been extensively impacted by military operations. This site and find are recommended ineligible for the National Register of Historic Places.

Surveys were conducted from November 3 through 12, 1999 and November 29-30, 1999. Principal Investigator for the project was Dr. Michael Trinkley and Field Director for the project was Ms. Rachel Campo. Field crew consisted of Mr. Jason Butler, Ms. Andrea Rombaur, Mr. Van Steen, and Ms. Kate Sullivan.

Curation

Archaeological site forms have been filed with the Georgia Archaeological Site Files. The field notes, photographic materials, artifact catalogs, and artifacts resulting from this investigation have been curated at Fort Stewart using their accessioning and cataloging system. The materials were assigned accession number 055. All records and duplicate copies have been provided to Fort Stewart and will be maintained by that institution in perpetuity.

NATURAL SETTING

Physiography and Drainage

Fort Stewart, which encompasses about 103,550 ha, forms a roughly rectangular shape measuring about 32 km north-south by about 56 km east-west. The fort's most distinctive feature is perhaps its lack of relief. Elevations range from about 50 m in the west to about 3 m in the east.

Located entirely within the Coastal Plain Province on the southeastern Atlantic coast of Georgia, this area is often referred to as the Atlantic Coast Flatwoods (Looper 1982:66). The coastal plain is best known for its featureless plains and marshes in the east. The flatwoods are characterized by their nearly level topography and poorly drained soils. The mostly sandy loam to sandy topsoils are underlain by marine sands, loams, or clays. The soils generally have high water tables and are often found to be unsuitable for a broad range of residential and industrial activities (Hodler and Schretter 1986:36). The area is also characterized by inlets and creeks draining an extensive system of drowned river systems and shallow marsh-filled coastal lagoons. The topography consists of subtle undulations in the landscape revealing the ridge and bay topography of the beach ridge plains (Mathews et al. 1980:137).

Fort Stewart is largely confined to what is often called the Barrier Island District — an area of slight to moderate dissection created by the advance and retreat of former sea levels. As a result, there are six shoreline deposit complexes found parallel to the coastline in a step-like progression of decreasing elevations. This dissection has also resulted in marshes that exist in poorly drained lowlands. To the northwest are the Vidalia Uplands, a moderately dissected upland with a well developed dendritic stream pattern based on gravelly, clayey sands. The floodplains are typically narrow, except along the major rivers where wider, bordering swamps are often found (Hodler and Schretter 1986:17).

A number of relatively small streams and creeks, which are part of the Ogeechee River drainage system, make up Fort Stewart's drainage pattern. The Canoochee River is the main drainage for the post and flows west to east through the center of the reservation. A number of smaller tributaries such as Canoochee, Taylors, and Savage creeks flow into the Canoochee River. The eastern boundary of Fort Stewart is defined by the Ogeechee River (Figure 4).

The survey tract, located in NRMU D7, lies south of Georgia State Highway 144 and west of Georgia State Highway 119. Watersheds in the tract drain into the Canoochee Creek, located northeast of the tract.

Modifications to the physical landscape in the survey area are great. The area has been repeatedly used for military training, resulting in modifications such as the construction of now deserted bunkers (Figure 5). The vegetation is dominated by managed pine forests, often with a dense understory (Figure 6). Natural landscape changes have been produced by floods that deposited alluvial soils in some areas.

Geology and Soils

The surface geology of Fort Stewart is dominated by sediments of Quaternary age (Hodler and Schretter 1986:12-13). Sand, silts, and clays originally derived from the Appalachian Mountains and the interior Piedmont are organized into coastal fluvial and aeolian deposits which virtually blanket the Coast. These sediments were transported seaward and deposited during the Quaternary period. Underlying the surface sediments are bedrock sedimentary strata of Tertiary and Mesozoic age which are almost uniformly eroded and variously lithified (Mathews et al. 1980:2). The Mesozoic and Tertiary sedimentary rocks are infrequently exposed, usually in river banks and bottoms, in deep tidal channels, and in man-made quarries.

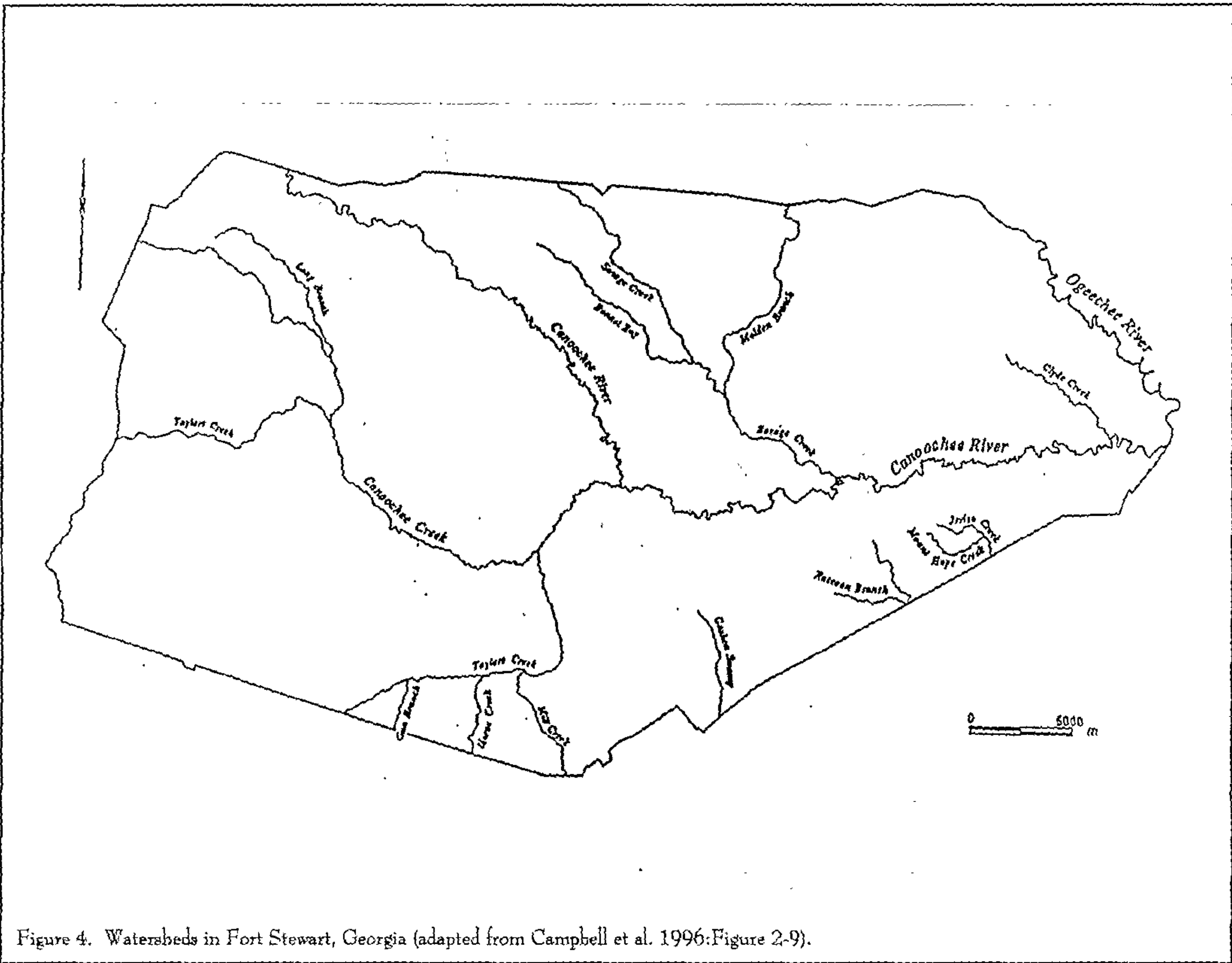

Figure 4. Watersheds in Fort Stewart, Georgia (adapted from Campbell et al. 1996:Figure 2-9).

Figure 5. Deserted military bunker in D7.2, view to the north.

Figure 6. Planted pine forest with dense understory in NRMU D7.2, view to the east.

Table 2.
Soil Series in the Survey Tract (adapted from Looper 1982)

Soil Series	Drainage	Water Table	A Horizon	B Horizon
Ellabelle	very poor	<15 cm	0-58 cm, loamy sand	58 cm-1.83 m, sandy loam to sandy clay loam
Johnston	very poor	<46 cm	0-1.09 m, mucky loam	1.09-1.52 m, sandy loam*
Leefield	somewhat poor	46-76 cm	0-55.88 cm, loamy sand	55.88 cm -1.83 m, sandy loam to sandy clay loam
Mascotte	poor	surface-<31 cm	0-36 cm, fine sand; and 53-81 cm, fine sand	36-53 cm, fine sand; and 81 cm-1.78 m sandy clay loam
Pelham	poor	15-46 cm	0-64 cm, loamy sand	64 cm-1.60 m, sandy loam to sandy clay loam
Stilson	moderately well	76-91 cm	0-73.66 cm, loamy sand	73.66 cm-1.91 m, sandy clay loam to clay

*Represents C Horizon, no B Horizon present

Of perhaps greatest significance in this discussion of coastal geology is an overview of chert resources. While agate, chalcedony, and jasper were also used by prehistoric groups, these materials occur in Georgia in very small amounts (Ledbetter et al. 1981:1-2), especially when compared to chert (Goad 1979:2). Chert, on the other hand, while occurring discontinuously, is present throughout the Coastal Plain, primarily associated with Paleozoic and Tertiary Period limestones. Depending on the various chemical impurities, Georgia chert ranges in color from black or brown to white, yellow, gray, and cream . Some cherts are fossiliferous.

While the Piedmont contributes a broad range of volcanic and metavolcanic materials important to prehistoric occupants, and may even contribute small quantities of jasper-like and agate material (Goad 1979:5), chert is found primarily in the Ridge and Valley Province in the extreme northwestern corner of the state and the Coastal Plain. Ledbetter and his colleagues note that chert-like materials may also occur "spottily" in the 20 km wide "hinge zone" between the Towaliga-Hartwell Fault and the Middleton Lowndesville Fault in the Inner Piedmont of Georgia (Ledbetter et al. 1981:6).

Goad reports that the major occurrences of chert in the Georgia Coastal Plain are found associated with Tertiary Period formations, primarily from Eocene and Oligocene Epoch deposits. Goad (1979:19) observes that, "the major occurrences of Coastal Plain chert are in southwestern Georgia, west of the Flint River, along the Fall Line, and in southeast Georgia along the Savannah River below Augusta."

Coastal Plain chert may be found as residual nodules and boulders, scattered along streams and ridges, or as cropping beds. Goad notes that different strata have recognizable chert forms, although the great range in variation among Coastal Plain chert makes the identification of specific point sources more difficult and less reliable than the identification of chert sources in the Ridge and Valley province (Goad 1979:24).

Sources have been identified from Baker, Bibb, Bulloch, Burke, Calhoun, Crisp, Decatur, Dooly, Dougherty, Early, Grady, Houston, Jefferson, Laurens,

Lee, Macon, Miller, Mitchell, Pulaski, Randolph, Richmond, Screven, Seminole, Stewart, Sumter, Thomas, Twiggs, Quitman, Washington, and Worth counties (Goad 1979:81-88). The closest sources to Fort Stewart are found in Bulloch County, about 50 km north of the study area. This chert, which has a dull luster and is grainy, ranges in color from black or tan to red, yellow, cream and white. The chert is fossiliferous and, when heated, resembles the Claiborne Stage cherts (described below) in color and texture. Other cherts include dark grays, slate blacks, clears, creams, browns, whites, and blue-whites or mottled colors, and textures can range from smooth to grainy. All are fossiliferous with a dull, soft luster. Heat treatment produces a glossy surface with yellow to dark red colors (Goad 1979:23-24).

In nearby Burke County, cherts are associated with Claiborne Group deposits from the Eocene Epoch. These cherts range in color from red, yellow, cream, and blue to mottled or striped. They typically have a dull sheen and are heavily fossiliferous. When heat treated the material turns to pink, dark red, or even bright orange. The fossil inclusions turn white, giving the chert a "spotted" appearance. Porous flints, jasper, and chalcedony are also present with the cherts in these deposits (Goad 1979:21).

Chert sources from the Oligocene Epoch occur in Laurens County, about 150 km to the northwest of the project area. This chert is typically dense and compact, vitreous, and ranges in color from translucent to red, yellow, or brown, with few fossil inclusions. Heat treated specimens are typically glossy and red or deep brown. Occasional jasper nodules are associated with this chert (Goad 1979:24).

The geomorphology of the area is greatly influenced by the raising and lowering of sea level during the Pleistocene and Holocene epochs, when glaciers repeatedly advanced and retreated in the northern portions of the United States. While these ice masses did not extend southward to Georgia, they nevertheless dramatically affected the area's geology by influencing the ocean levels which generated a series of marine terraces (Hodler and Schretter 1986:27; Looper 1982:2-3; Campbell et al. 1996:19). Fort Stewart incorporates portions of the Sunderland, Wicomico, Penholoway, Talbot, and Pamlico marine terraces which range in elevation from 52 m above mean sea level (AMSL) to 8 m AMSL (Hodler and Schretter 1986:27; Campbell et al. 1996:19-22). A recent geoarchaeological overview of soils and buried site potential on Fort Stewart has been prepared by Leigh and Ivester (1998).

Today, modern soil science identifies 11 general soil units in Liberty County. Overall, the soil profiles in this county exhibits characteristics that reflect "moderately well drained and somewhat poorly drained soils on ridges, and poorly drained and very poorly drained soils on flood plains and in broad low areas, depressions, marshes, and drainageways" (Looper 1982:1).

These general soil units are further divided into soil series, which consist of soils with similar profiles and major horizons. Soil series are then divided into several soil phases, such as Pooler sandy loam (Paulk 1980:14). The soil series described by Looper (1982) are examples of typical soils, including a discussion of the depths, hues, values and chromes for each A and B horizon. A brief description of these soil series is found in Table 2. The following paragraphs will address the soils in the survey tract, with particular attention given to the percentages of soil types and draining characteristics present in the survey area.

The survey tract consists of Ellabelle, Johnston and Bibb, Leefield, Mascotte, Pelham, and Stilson soils (Looper 1982; see Figure 7). The soil series have water tables that occur from the surface to nearly a meter below the surface (Table 2). Wet swampy areas in the survey area were found along the eastern edge of the sniper tract and in much of the low probability survey area. The soils on the tract can not be generalized, but represent a range of loams to sandy clays (Table 2).

Considering all three tracts together, the most common soils are the Mascotte fine sands, which comprise 52.2% of the three tracts. The next most common soil is the Johnson-Bibb Association, which is found in 29% of the area. This is followed by the Leefield soils, consisting of 10.4%, and the Pelham soils at 7.1%. The Ellebelle and Stilson soils both consist of less than 1% of the tract. In other words, less

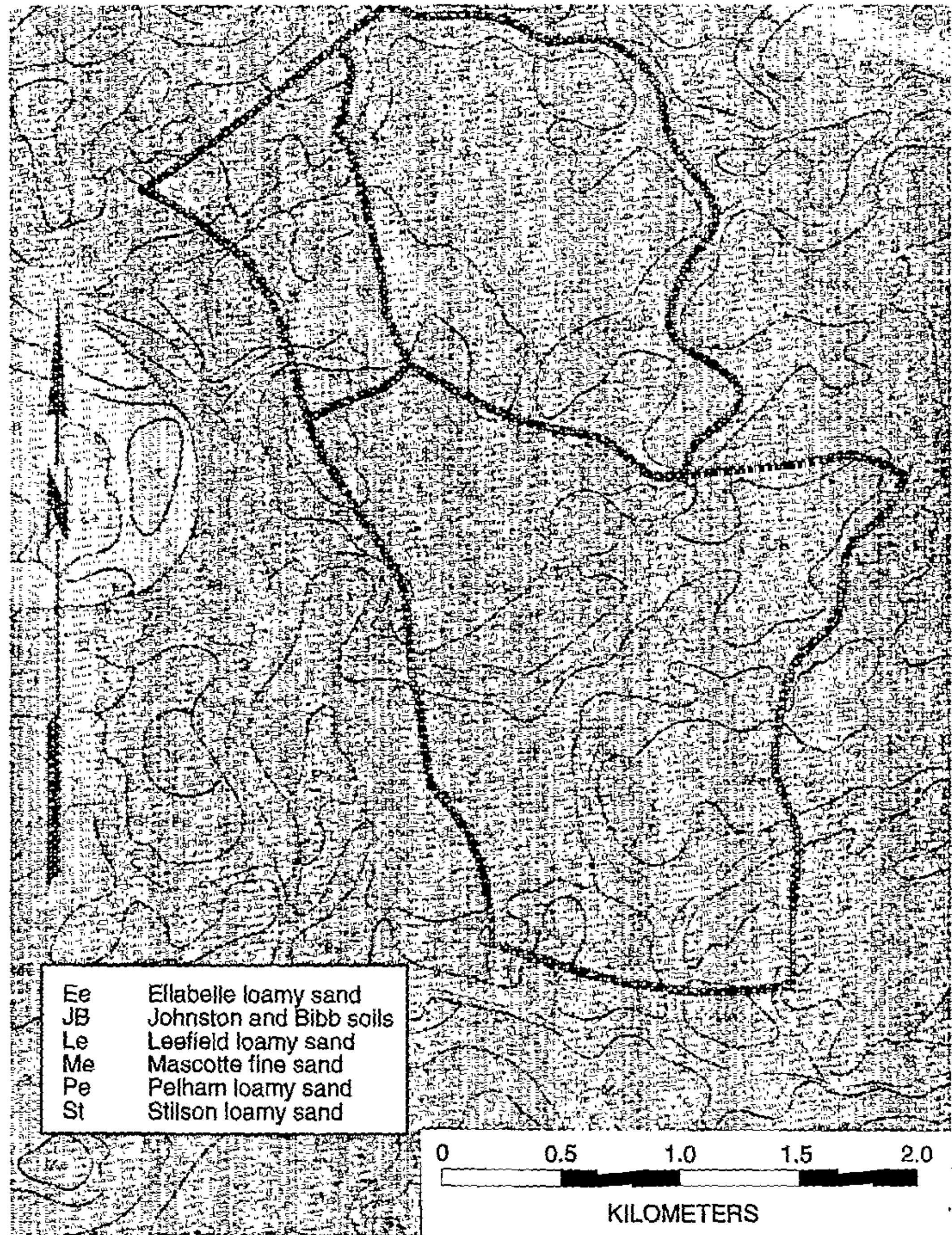

Figure 7. Soil types in survey tract, Liberty County

Table 3.
Soils in the Survey Tracts (as %)

Soil Series	High Probability	Low Probability	Sniper	Combined
Ellebelle		0.8		0.5
Johnson-Bibb	6.7	33.7	28.2	29.0
Leefield	37.8	1.4	16.9	10.4
Mascotte	33.3	54.1	54.9	52.2
Pelham	14.4	10.0		7.1
Stilson	7.8	0.8		0.5

than 1% of the 322.5 ha are well drained and only 10.4% is classified even as somewhat poorly drained.

Table 3 shows the soils found in each tract. While the tract defined as high probability does contain the most well drained soil (the Stilson Series accounts for 7.8% of the tract) and the two poorest drained soils are relatively sparse (there are no Ellebelle soils and the Johnson-Bibb soils account for only 6.7% of the tract), poorly drained to somewhat poorly drained Mascotte and Leefield soils still account for over two-thirds of the area. Although the survey was conducted during a relatively dry period, it is clear that all three tracts are very low, poorly drained, and exhibit few areas conducive to permanent settlement.

Soils and Site Locations

According to the *Fort Stewart and Hunter Army Airfield Historic Preservation Plan,* soils are designated as very high probability, high probability, medium probability or low probability (Campbell et. al 1996:202). The criteria for probability designations can be found in the *Fort Stewart and Hunter Army Airfield Historic Preservation Plan* (Campbell et al. 1996:203). In general, the probability is based on proximity to rivers and streams, the type of drainage, and the soil.

Predictive modeling for Fort Stewart suggests that sites will be located in certain high probability soils, many of which are somewhat poorly drained to well drained (Campbell et al. 1996:209). A draft for a revised predictive model for the post examines the predictive model from the *HPP* based on 15,378 ha of archaeological survey (McKivergan 1998). The revised predictive model considers the probability of locating sites at specific distances from water, and the probability of locating sites on certain soil types. McKivergan (1998) notes that distance to water is not a practical model, as almost a third of the post contains surface water. Based on data from these archaeological surveys, soils are classified as having a high, indeterminate, or low probability of containing archaeological sites. High probability soils have a higher ratio of observed sites than expected sites, those with a ratio higher than 1.00. Indeterminate soils have a ratio of 1.00 observed to expected sites. Low probability soils have a ratio of less than 1.00 observed to expected sites.[1]

The current study, which identified only one site (9LI875), provides relatively little additional data for the examination of soils and site locations. The single identified site is on Stilson soils, which are universally considered to have a high potential for archaeological sites. The Observed Sites/Expected Sites ratio is 2.28, fifth highest of all soils found on Fort Stewart (McKivergan 1998) — and the highest of those soils in the survey tract. It is therefore not unexpected that the soils would exhibit historic occupation.

The isolated find (9LI874) was recovered from Leefield soils. These are given a high probability rating by McKivergan (1998), although the Observed Sites/Expected Sites ratio is only 1.12. This soil ranks 14th in McKivergan's model, with 16 soils ranked lower. Therefore, while there are slightly more sites found on these soils than might be expected, they still

[1] The source document does not specifically explain the basis on which the "observed" or "expected" sites were computed, other than that all discussions are in the context of acres, not hectares.

do not appear to represent primary areas of occupation at Fort Stewart.

While there is no doubt that soils are an important attribute, we also believe that historic sites are located in proximity to roads and transportation areas, such as railroad depots, rather than exclusively in association with specific soils.

Climate

The southeastern Atlantic coast of Georgia is usually hot and humid in the summer with a winter that is cool to occasionally bitter cold. Georgia's highest temperatures normally occur in July and, in the Fort Stewart area the summer average daily temperature is 80°F. The lowest temperature occurs in January and winter temperatures average 53° F. The average growing season in the Fort Stewart area ranges from about 260 to 270 days (Hodler and Schretter 1986:40).

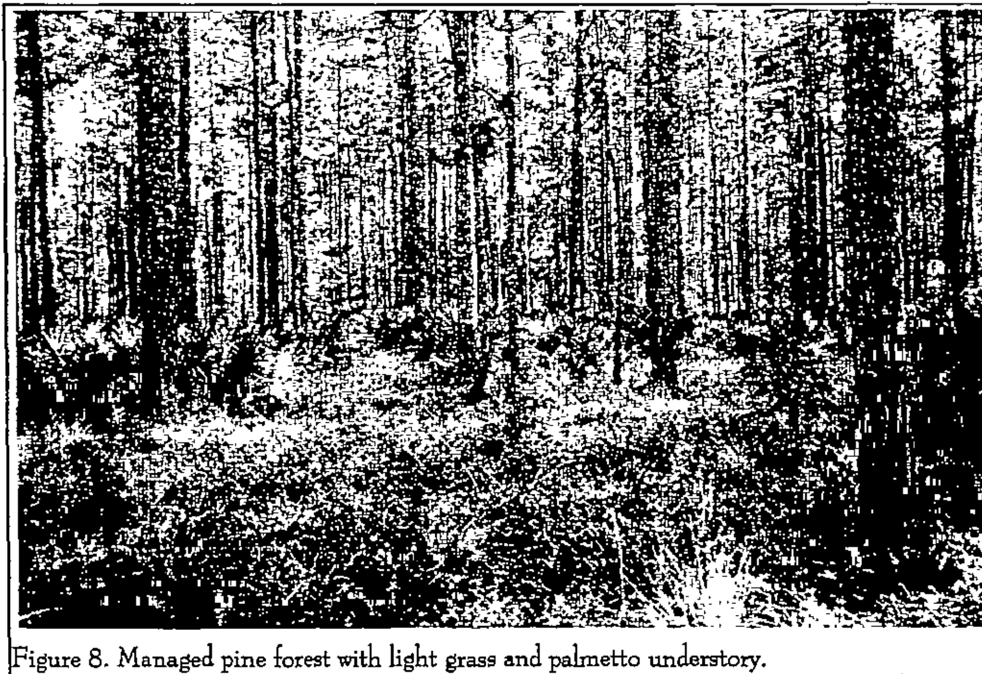
Figure 8. Managed pine forest with light grass and palmetto understory.

Occasional tropical storms, coupled with the flow of moist air from the Gulf of Mexico over the warm land surface, make the late summer the season of greatest rainfall in southeastern Georgia; while November is typically the month of lowest rainfall for the project area (Clements 1989:53; Hodler and Schretter 1986:38). The total annual precipitation is 1.25 m. Of this, 60% usually falls from April through October, which includes the growing season for most crops (Looper 1982:2). During 1954, one of the driest years on record, the rainfall for the project area was only about 70 cm — about 55% of the normal rainfall. Campbell et al. (1996:13) suggest that floods are actually more common, typically occurring in the winter and spring. The flood-producing rains are usually caused with slow-moving low pressure centers and may be associated with tropical storms or prolonged thunder storm activity.

During the late Pleistocene and early Holocene periods temperatures were considerably cooler than they are today. Temperatures began to moderate and approach modern temperatures along the Southeast Atlantic Slope around 7,000 B.P. (Wright 1976:594). A more thorough discussion is provided below relating vegetational change to these climatic ranges.

Floristics and Paleoenvironment

The Coastal Plain in the vicinity of Fort Stewart is today dominated by longleaf-slash pines with oaks and yellow poplar found as common associates (Hodler and Schretter 1986:52; Shantz and Zon 1936:5). Although forests of large, equal-age pines were noted by explorers in the seventeenth century, this vegetation is largely the result of intentional action by humans. Described as a fire subclimax forest, these monospecific stands are

maintained by periodic burning which exclude the young of most other arboreal species.

Küchler (1964) identifies the potential natural vegetation, that expected without the interference of humans, as a Southern Mixed Forest. These are tall forests of broadleaf deciduous and evergreen and needleleaf evergreen trees. The dominants are beech, sweet gum, southern magnolia, white oak, and laurel oak. Slash and loblolly pines are also dominants, although they would not be as prevalent as they are in today's fire subclimate setting. Other components include maples, hickories, dogwood, and palmetto (Küchler 1964:112). Along the major drainages Küchler identified Southern Floodplain Forests — dense, medium tall to tall forests of broadleaf deciduous and evergreen trees and shrubs and needleleaf deciduous trees such as tupelo, oak, bald cypress, along with maples, hickories, ash, sweet gum, oaks, and elm (Küchler 1964:113).

Today, suggestions of these potential natural forests are found only in more mesic, edaphically favorable and fire-protected areas (Campbell et al. 1996:14). In such areas, drainage, soil types, elevation, and slope are the major factors affecting vegetation and a range of different species, including live oaks, hickories, palmettoes, hollies, and bays will be found.

Today, the survey tract studied is heavily managed. This includes, but is not limited to, the cutting of firebreaks and periodic burns, and use of the sniper range for active training. Areas that have not been cleared are dominated by open pine forests with an understory vegetation which ranges from very dense in areas found along drainages or wetland areas to very sparse in others (Figures 6 and 8). Historic site locations quite often contain oaks and ornamental vegetation (Figure 9), whereas low swampy areas generally contain a dense undergrowth of scrub oak.

In the 1860s less than 30% of what would later become Liberty and Long counties (but known at that time as Liberty County) was improved for cultivation (Hilliard 1984:Map 44). By the 1940s only about a third of these two counties was cropped with most of the land being forested (Hodler and Schretter 1986:127). At the time Fort Stewart was acquired by the U.S. Army, Campbell et al. (1996:10) report that most of the plots were small to medium size woodlots. Today, about 20% of Liberty and Long counties is farmland, with about 13% actually under cultivation (Clements 1989:251, 255). Cotton and rice were historically produced on the bottomlands (Campbell et al. 1996:79-80). By the late antebellum there seems to have been a focused shift to small tracts of peas, sweet potatoes, and corn. Rice was largely abandoned by 1860 and cotton

Figure 9.Hardwoods and more open vegetation in the area of 9LI875, view to the west.

was little more than a subsidiary interest (Campbell et al. 1996:106-107). By the postbellum cotton and corn were still planted, although potatoes, oats, cane, peaches, figs, grapes, and pecans were also being grown, at least in small quantities (Knight 1917:1256). Lumber and live stock were also growing industries. Today the principal agricultural activity for much of the area is ranching, while the principal crops are corn and soybeans, except in Tattnall County, where Vidalia onions are the most common crop. Logging remains a substantial economic activity (Clements 1989:251, 255).

The naval stores industry has played a major part in Georgia's Coastal Plain economy since the nineteenth century (Campbell et al. 1996:79-80; see also Butler 1998,Little et al. 2000:52-72). Obtained by heating the resin-filled heartwood of pine logs, pitch and tar were replaced as major exports by turpentine and rosin. These products are distilled from the raw gum exuded by living pine trees. Growing through the late antebellum and early postbellum, Georgia dominated U.S. gum production, accounting for about 50% by the 1890s. It lost considerable ground to adjacent Florida in the next four decades, but recovered its lead in the late 1930s and early 1940s. In 1970, Georgia contributed about 85% of the U.S. gum naval store production, although the significance of the gum market has declined dramatically in the mid to late twentieth century as the tall oil or sulfate production increased. Exacerbating the situation is a continuing severe labor shortage brought about by the low wages, the seasonal nature of the work, and its focus on hot and dirty manual labor (Hodler and Schretter 1986:148).

Pollen cores obtained from the Southeast Coastal Plain indicate a sequence of successional forest types from the Full Glacial through the Post Glacial periods (Watts 1971; Whitehead 1965). Before strong evidence of human population (pre-15,000 B.P.), cold-adapted vegetation predominated by spruce and jack pine was found in the Piedmont and Coastal Plain area. Other less common species included oak and ironwood. All of these species suggest a much colder and drier environment than found today (Watts 1980:326). Some have suggested that this climate was much like today's eastern Canadian boreal forests, dominated by pine and spruce distributed in a mosaic pattern of stands within sedge-dominated prairies. Campbell et al. (1996:34), however, also present evidence suggesting that while the climate was colder, it may *not* have been drastic enough to support a full boreal forest.

The somewhat warmer and moister environment evidenced in the Late Glacial (15,000 to 10,000 B.P.) is associated with an increase in deciduous species. Northern hardwoods, such as oak, hickory, beech, birch, and elm began replacing the spruce and jack pine populations. This change corresponds with warmer summer temperatures and colder winter temperatures as well as an increase in precipitation. It is during this period that there is the first moderately well documented evidence for human occupation (Watts 1980; Sassaman et al. 1990). This period was a transitional period between the glacial Late Pleistocene and the essentially modern climatic conditions of the Holocene. The resulting mesic forest, with its relatively high percentages of beech and hickory, has no modern analog and was the result of the cool, moist conditions which characterized this transition.

During the Post Glacial (10,000 B.P. to present) oak and hickory dominated the region. Other species such as walnut, hemlock, and hazelnut disappeared from the pollen record. By 9,500 B.P. hickory and ironwood species declined and were replaced by sweetgum and blackgum. These changes prior to 7,000 B.P. suggest periods of rapid warming and increased moisture (Watts 1980; Watts and Stuiver 1980). It has been observed that these very rapid environmental changes would have created a dynamic ecosystem requiring constant adaptive adjustments on the part of early groups (Cable and Mueller 1980:7).

In the Georgia Coastal Plain, southern pine communities displaced the oak-dominated forests between 8,000 and 6,000 B.P. which led to a decrease in mast production (Sassaman et al. 1990:22; Campbell et al. 1996:35-36). This vegetational change probably had an effect on prehistoric land use during certain times of the year, since nut masts were probably more isolated and concentrated rather than widespread. Coupled with these vegetational changes was a cooler, moister climate (Watts 1971 and 1980).

Campbell et al. (1996:35-39) suggest a

possible cause and effect relationship between climate changes beginning about 8,300 B.P. and the rise of pine forests. They note that as the climate shifted from less rainfall to a seasonably variable moisture regime there was also an increase in lightning-producing spring storms. These storms, they suggest, created the right conditions for frequent natural fires which would encourage, and maintain the presence of longleaf pine. They note that even today the mesic climatic regime "continues to provide an ideal environment for the longleaf pine and the Southern Evergreen Forest" (Campbell et al. 1996:38).

From about 5,000 B.P. and continuing to the present, Whitehead (1973) found pine increasing slightly, although oak appeared to remain dominant in natural forest stands. The precontact environment of the Piedmont Southeastern United States was termed "temperate deciduous forest" by Shelford (1974:56-88) with oak and hickory interspersed with pine, maple, ash, and other deciduous species (for a graphic representation see Shantz and Zon 1936). Küchler (1964) further supports this reconstruction.

Campbell et al. (1996:38-39) also suggest that other vegetational "adjustments" have included the filling in of Carolina bays with peat to form extensive pocosin wetlands and the expansion of coastal swamps under the influence of rising sea levels.

By the historic period the lower coastal plain was dominated by loblolly pine. The loblolly is also known as the "bull pine" because of its prodigious size and remarkable ability to invade dry, flat terrain and even the hilly uplands. The pines formed vast, open forests interrupted only by the occasional inland swamp and its accompanying hardwoods.

This area of the Coastal Plain, the soil, and the vegetation frequently attracted the attention of observant commentators. In the early eighteenth century John Wesley mentioned that:

> the Land is of four Sorts, Pine-barren, Oakland, Swamp and Marsh. The Pine-Land is of far the greatest Extent, especially near the Sea-Coasts. The Soil of this, is a dry, whitish Sand, producing Shrubs of several sorts, and between them a spiry, coarse Grass which Cattle do not love to feed. But here and there is a little of a better kind, especially in the Savannahs (so they call the low, watry Meadows, which are usually intermixt with Pine-Lands) (Reese 1974:232-233).

Throughout Georgia's history, these "pine-barrens" were known as land of less value than other, more fertile tracts. Even as early as 1740, William Stephens provided an account which observed, "the American dialect distinguishes land into pine, oak and hickory, swamp, savannah, and marsh" (Frech and Swindler 1973:79). He commented that where oak and hickory trees grew "the soil is in general of a strong nature, and very well esteemed for planting, being found by experience to produce the best crops of Indian Corn, and most sorts of grain" (Frech and Swindler 1973:79). The swamp soils, with their "black moulds" were best for rice. The savannahs and marshes, while producing no trees, did contain large numbers of "canes," which were reported to be excellent winter forage for cattle. Only for the pine lands, "of a sandy surface," could Stephens find nothing encouraging to say.

English occupation of the countryside, including occupation of Georgia's pine barrens, gradually changed its appearance. The pines which dominated the topography, for example, began to give way to scrubby hardwoods by the early 1800s (Silver 1990:187). It is almost certain that the process was largely completed by the mid-1800s. Yet there were other, equally momentous changes. Turkeys and other wild fowl were less common, while the flocks of Carolina parakeets and passenger pigeons approached extinction. Buffaloes were already gone from the neighboring Piedmont. In the lowland swamps the beavers, otters, and minks were close to extinct, as were other occasional visitors such as bears, wolves, panthers, and bobcats.

The countryside was becoming increasingly dominated by small farms. The new ecology, created by clearing and farming grains, encouraged flocks of quail. While the minks and otters gave way to hunting

pressures, they were quickly replaced by the opossum. By the nineteenth century the most common animals were the cattle, hogs, and sheep brought by the Coastal Plain settlers. Silver notes that, "fewer canebrakes and overgrazed mixed hardwood forests attest to the forage habits of these Old World Beasts" (Silver 1990:187-188). The changes were dramatic, gradually giving rise to the lower Coastal Plain we know today.

PREHISTORIC AND HISTORIC OVERVIEW

Previous Research

Relatively few in-depth studies have been conducted at Fort Stewart. The majority of those readily available have been contracts, let by the United States Army, in an effort to determine the extent of cultural resources located on the base.

The earliest study of any intensity was that conducted in 1980 and 1981 by Professional Analysts, Inc. (Miller et al. 1983). The goal of the study was to conduct a sample survey in order to produce a predictive model for the entire facility (Campbell et al. 1996:174). The sample universe was established as all fire breaks less than 3-years old. These were stratified by soil association and a pedestrian survey was conducted. Only the actual fire break was examined and no shovel tests were excavated. Campbell et al. (1996:174) report that the total coverage was 370 km. Assuming that the fire breaks were an average of 3 m in width, this would account for about 111 ha. This represents a 0.1% survey of the entire base.

In addition to the stratified sample survey, a judgmental survey was conducted of base food plots and an effort was apparently made to relocate a number of previously identified sites on the base (Campbell et al. 1996:176). In all, 29 previously recorded archaeological sites were revisited.

The survey identified a total of 85 sites, including 50 prehistoric sites, 17 historic sites, and 18 prehistoric and historic sites. In all, 145 components were represented. This survey found a density of about 1 site per ha. The site types included lithic scatters (many without diagnostic remains), villages, a burial mound, and riverine camps. Historic sites dated primarily to the late nineteenth century. Historic research also identified, as potential sites, 24 historic properties.

This study forms the nucleus of Fort Stewart's predictive model. Miller et al. (1983 quoted in Campbell et al. 1996:203) identified four probability zones:

> Very high probability — locations which include well-drained bluffs along the Ogeechee and Canoochee Rivers.
>
> High probability — areas where well-drained soils, such as Craven, Lakeland, Tifton, Pooler, Ocilla, Fuquay, and Stilson, occur. Also included are areas in proximity to high order streams.
>
> Medium probability — areas which include all of the soil types that are not excessively drained or very poorly drained, representing the vast majority of the base. These areas essentially represent portions of Fort Stewart for which the survey coverage was inadequate to allow any reasonable prediction of probability.
>
> Low probability — areas where the soils, such as Rutledge, Mandarin, Osier, Johnston, Ellabelle, and Bibb, are either excessively drained or very poorly drained.

Campbell et al. (1996:211-228) provide a detailed analysis of this model, which has recently been updated by McKivergan (1998). Most importantly, they provide a detailed listing of soils, assigning a probability ranking. While the single minded reliance by Miller et al. (1983) on soil and drainage to predict archaeological probability can be criticized, it does offer an initial focus for future efforts at Fort Stewart. This

current study, in fact, is at least partially based on the early predictive work by Miller and his colleagues.

Other investigations in the area have included a 1988 survey conducted in the Brigade Maneuver area of Fort Stewart by Carolina Archaeological Services (Jackson et al. 1988). Although this tract included 1,507 ha it is of limited comparability since it involved no shovel testing — all of the survey was pedestrian (Jackson et al. 1988:22; Campbell et al. 1996:181).

During this survey of the Brigade Maneuver area, forty-three archaeological sites were reported, including Early Archaic and Early Woodland remains, and historic sites dating primarily from the late nineteenth and early twentieth centuries (Campbell et al. 1996:181).

Four site types were identified during the Carolina Archaeological Services survey (Campbell et al. 1996:191):

> Site Type 1- Prehistoric campsites or lithic scatters — contain diagnostic or non-diagnostic lithic debris and/or ceramic sherds indicative of aboriginal subsistence activities.
>
> Site Type 2 - Late nineteenth and early twentieth century farmsteads and activity loci — contain diagnostic historic material, often in association with brick, features and/or aligned trees, or ornamental vegetation (i.e., orchards, groves, gardens).
>
> Site Type 3 - Historic Cemeteries — contain marked or unmarked human interments.
>
> Site Type 4 - Multicomponent sites (historic farmsteads/activity locus and prehistoric activity locus) — contain debris associated with historic farmsteads or activity loci, plus prehistoric activities.

Early Archaic and Late Woodland components were found to co-occur on the same sites within the Carolina Archaeological Services study (Jackson et al. 1988:46).

The study at Brigade Maneuver area in general (see Campbell et al. 1996:212-213), supports the probability assessments established by Miller et al. (1983). Jackson et al. (1988), however, note that site density may be higher than initially suggested for Fort Stewart. Although only 1 site per 24.6 ha was recorded, few of the high probability soils were encountered in their survey (Campbell et al. 1996:181).

In 1995-96 Chicora Foundation conducted a 522 ha shovel test survey of the JAECK Drop Zone, during which relatively few sites were located (Trinkley et al. 1996). These included two prehistoric sites and two historic sites.

A second area containing 241 ha, known as the Taylors Creek tract, was surveyed at the same time by Chicora Foundation. A total of three prehistoric sites and the historic town of Taylors Creek were identified during the survey.

Prehistoric sites recorded during the 1995-96 Chicora Foundation survey contained artifacts spanning the Early Archaic to Mississippian periods. The three historic sites, including the Taylors Creek town, contained artifacts from the late eighteenth century to the twentieth century.

In 1996-97 Chicora Foundation conducted an 809 ha shovel test survey (survey tract "A") in portions of training areas E-16 and E-20 (Trinkley et al. 1997). Seventeen sites and 14 isolated occurrences were identified. These included three prehistoric sites, 14 historic sites, one of which was the small community of Shady Grove, and one multicomponent prehistoric/historic site. The prehistoric sites contained artifacts that date to the Mississippian period.

A second area ("B") containing 804 ha in portions of training areas E-14 and E-15, was shovel tested at the same time as the above survey. Four sites and eight isolated occurrences were identified. Although four historic sites were identified in this

survey tract, no prehistoric sites were identified.

The historic sites recorded during the 1996-97 Chicora Foundation survey, date from the mid-nineteenth century to the twentieth century.

In 1998, the Chicora Foundation conducted a survey covering nine survey tracts, including A9.1, A12.1, A12.2, B7.2, B7.3, E6.3, E8.3, F7.2, and F17.3 (Campo et al. 1999a). A total of 26 sites and 19 isolated sites were identified, including two prehistoric sites adjacent to Taylors Creek, three cemeteries, a railroad, and an earthen dam in Taylors Creek. The prehistoric sites contained artifacts that date to the Deptford period.

Chicora Foundation conducted an additional survey in late 1998 of three survey tracts, including Training Area A6.4, A8.1, and B24.2. These surveys identified two prehistoric finds, two historic finds, and five historic sites (Campo 1999b). Only one of these sites, 9BN186, the Roding Range, was found to be indeterminate (potentially eligible) for inclusion on the National Register.

A 1999 survey of a portion of Red Cloud Alpha Range (NRMUs B11.3 and B11.5) identified only two sites and one isolated occurrence. The two sites were historic scatters, while the one isolated find was a single exhausted Savannah River Stemmed point (Campo et al. 1999).

Most recently Panamerican Consultants (Little et al. 2000) has completed a survey of 3,938.8 ha on Fort Stewart. The closest NRMU, D11.1 to the west, yielded 14 isolated occurrences, all historic, and six sites, including three prehistoric, and three with both prehistoric and historic components. Of these sites, only one, 9LG213 (a historic site perhaps dating from the early nineteenth century) was recommended potentially eligible or indeterminate. Recovery of sites in this area was enhanced by the distribution of better drained soils.

The Chicora Foundation studies, in general (see Campo et al. 1999a:164-165; Trinkley et al. 1996:113-123 and Trinkley et al 1997:139-142), did not confirm or deny the probability assessments established by Miller et al. (1983). Trinkley et al. (1996), however, note that the site density is slightly lower in the JAECK Drop Zone survey tract (0.76 sites per km^2) than that suggested for Fort Stewart (1.1 sites per km^2), whereas the Taylors Creek survey tract exhibits a higher site density (2.5 sites per km^2). Assessment of the data recovered during the 1996-1997 survey found a site density in survey tract "A" (portions of Training Areas E-16 and E-20) of 3.83 sites per km^2 and a site density in survey tract "B" (portions of Training Areas E-14 and E-15) of 1.49 sites per km^2.

The Campbell et al. (1996) predictive model essentially relies on soil drainage, while the revised predictive model (McKivergan 1998) relies on both soil drainage and proximity to water. The Chicora (1996 and 1998) studies determined that site probabilities are best based on a broad range of factors. The location of prehistoric sites may be dependent on factors such as distance to water. Historic sites locations seem to be determined by commercial, industrial, and broad agricultural needs rather than on strictly defined soil, water, or topography criteria.

Prehistoric Overview

Overviews for Georgia's prehistory, while of differing lengths and complexity, are available in virtually every compliance report prepared for Fort Stewart. Of special interest is the Historic Preservation Plan for Fort Stewart which provides a lengthy overview of the prehistoric cultural sequence (Campbell et al. 1996:45-69). In addition, there are some "classic" sources well worth attention, such as Williams' edited works of Antonio J. Waring, Jr. (Williams 1968).

These can be supplemented with a broad range of theses and dissertations, such as Lewis Larson's examination of coastal subsistence technology (Larson 1969), Chester DePratter's discussion of Southeastern chiefdoms (DePratter 1983), or Morgan Crook's examination of Mississippian community organization along the coast (Crook 1978).

Also extremely helpful, perhaps even essential, are a handful of recent local synthetic statements, such as that offered by Anderson and Sassaman (1996) for

Dates	Period	Sub-Period	Regional Phases: COASTAL	Regional Phases: MIDDLE SAVANNAH VALLEY	Regional Phases: GEORGIA COASTAL PLAIN PINE BARRENS
1715	HIST.		Altamaha / Sutherland Bluff	Rembert	Square Ground Lamar
1500	MISS.	LATE	Irene / Pine Harbor	Hollywood	Early Lamar Irene?
		EARLY	Savannah	Lawton	Ocmulgee III Swift Creek
1100	WOODLAND	LATE	St. Catherines / Swift Creek	Savannah	
1000		MIDDLE	Wilmington	Sand Tempered Wilmington?	Ocmulgee I & II
A.D. / B.C.			Deptford	Deptford	
200		EARLY	Refuge		?
1100	ARCHAIC	LATE		Thom's Creek Stallings / St. Simons Savannah River Gary	
2000					
3000		MIDDLE		Guilford Morrow Mountain Stanly	
5000		EARLY		Kirk	
8000				Palmer Bolen Hardaway	
10,000	PALEO INDIAN			Hardaway - Dalton	Beaver Lake
12,000			Cumberland	Clovis	Simpson

Figure 10. Cultural periods for the Georgia coastal region (adapted from Braley 1990; DePratter 1979:Table 30; Sassaman et al., 1990:Table 1).

the Early Archaic, Sassaman and Anderson (1994) for the Middle and Late Archaic, and Anderson et al. (1990) for the Paleoindian. Only a few of the many available sources are included in this study, but these should be adequate to give the reader a "feel" for the area and help establish a context for the various sites identified in the current study. For those desiring a more general synthesis, perhaps the most readable and

well balanced is that offered by Judith Bense (1994), *Archaeology of the Southeastern United States: Paleoindian to World War I*. Figure 10 offers a generalized view of Georgia's cultural periods.

Paleoindian Period

The Paleoindian Period, most commonly dated from about 12,000 to 10,000 B.P., although it has been suggested by some archaeologists that the beginning date for the Paleoindian Period be pushed to as early as 14,000 B.P. (Oliver 1981), Lithic tools associated with the Paleoindian Period include basally thinned, side-notched projectile points, fluted, lanceolate projectile points, side scrapers, end scrapers, and drills (Coe 1964; Michie 1977; Williams 1968). Non-fluted points such as the Hardaway Side-Notched and Palmer Corner-Notched types, usually accepted as Early Archaic, are occasionally seen as representatives of the terminal phase of the Paleoindian Period (Figure 11). This view, verbally suggested by Coe for a number of years, has considerable technological appeal.[1] For the North Carolina area Oliver suggests a continuity from the Hardaway Blade through the Hardaway-Dalton to the Hardaway Side-Notched, eventually to the Palmer Corner-Notched (Oliver 1985:199-200). While convincingly argued, this approach is not universally accepted and there appears to be no such continuum in Georgia.

The Paleoindian 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 toward the exploitation of now extinct mega-fauna" (Michie 1977:124). Survey data for Paleoindian tools, most notably fluted points, is rather sparse for Georgia (Ledbetter et al. 1996). In spite of this, the distribution offered by Anderson (1992:Figure 5.1) reveals a rather general, and widespread, occurrence throughout the region. The recognition of Paleoindian sites in Georgia is hindered not only by a lack of research, but also by the small size of typical sites (often the Paleoindian component may be recognized by a single tool) and the heavy amount of reworking and curation seen in Paleoindian tools from Georgia (Ledbetter et al. 1996:284).

Distinctive projectile points include lanceolates such as Clovis, Dalton, Suwannee, and perhaps the Hardaway (Anderson 1990:7-9).During the later portion of the Paleoindian, many researchers (see Snow 1977:3-4, Figure 1 for example) borrow from Florida and suggest that these more classic large lanceolate points were replaced by smaller points with concave bases, such as the Sante Fe, and Beaver Lake (Bullen 1975:45-47; Milanich and Fairbanks 1980:45). In addition, points such as the Bolen Plain and Bolen Beveled (Bullen 1975:44, 49-53; Milanich and Fairbanks 1980:45) are thought to be intermediate between the Late Paleoindian and Early Archaic in much the same way as the Palmer of South and North Carolina is regarded.

Unfortunately, relatively little is known about Paleoindian subsistence strategies, settlement systems, or social organization (see, however, Anderson 1992 for an excellent overview and synthesis of what is known). Generally, archaeologists agree that the Paleoindian groups were at a band level of society (see Service 1966), were nomadic, and were both hunters and foragers. While population density, based on 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).

According to Campbell et al. (1996:47-49) no Paleoindian sites have been identified on Fort Stewart through professional research (excepting the recovery of a Dalton projectile point from 9LI276 and a Hardaway-Dalton from 9BN36), although at least one local collector has reported early points from the general area. This near absence is attributed to the lack of

[1] While never discussed by Coe at length, he did observe that many of the Hardaway points, especially from the lowest contexts, had facial fluting or thinning which, "in cases where the side-notches or basal portions were missing, . . . could be mistaken for fluted points of the Paleo-Indian period" (Coe 1964:64). While not an especially strong statement, it does reveal the formation of the concept. Further insight is offered by Ward's (1983:63) all too brief comments on the more recent investigations at the Hardaway site (see also Daniel 1992).

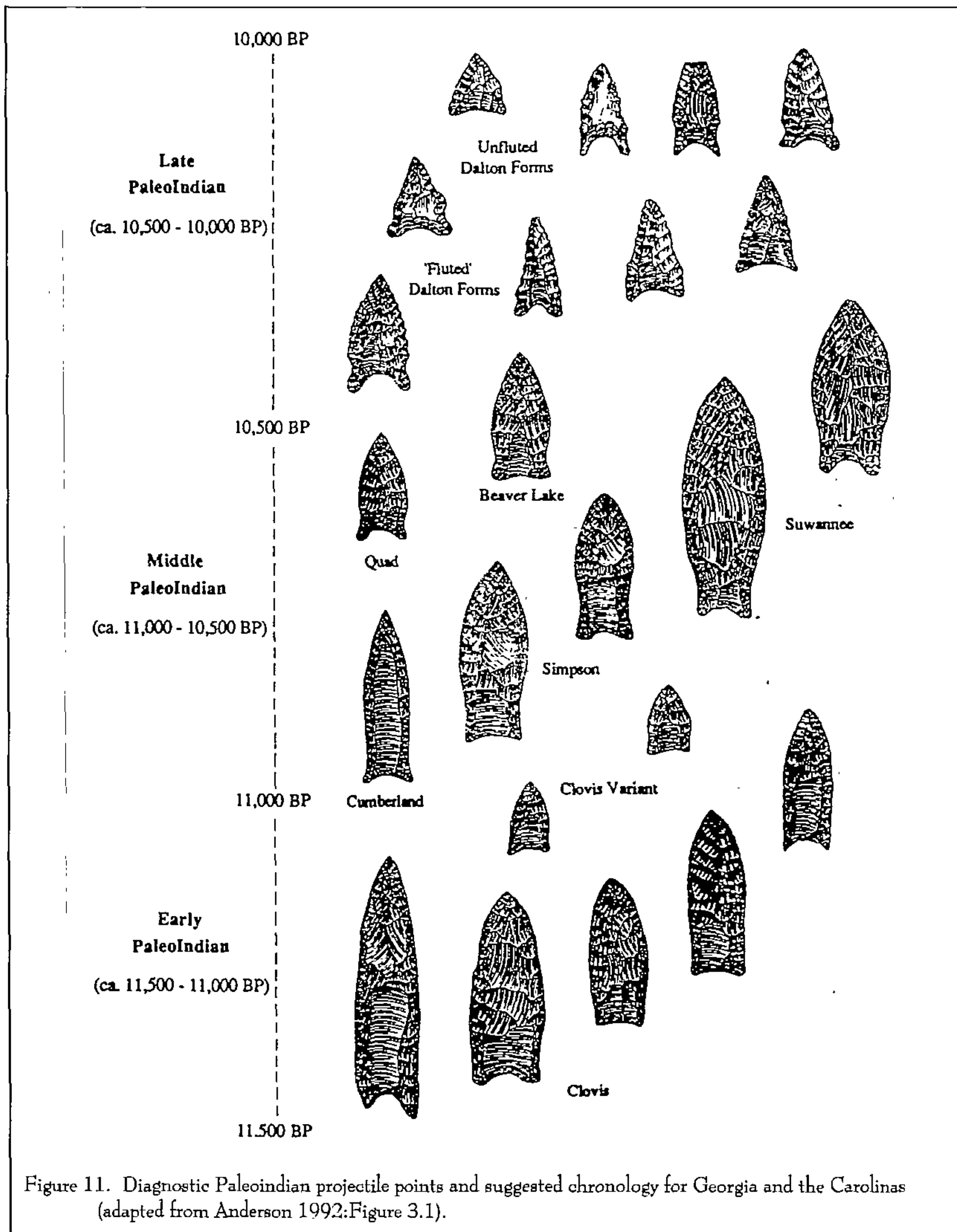

Figure 11. Diagnostic Paleoindian projectile points and suggested chronology for Georgia and the Carolinas (adapted from Anderson 1992:Figure 3.1).

readily available raw materials. Should Paleoindian materials be encountered, Georgia has developed a rather detailed preservation plan which outlines a broad range of appropriate research questions (Anderson et al. 1990).

The prevalence of Paleoindian occupation is dramatically increased, however, if Bolen and Palmer points are included. Campbell et al. (1996:52) note that several sites have produced these materials, which they attribute to the Early Archaic. In addition, Snow comments that "large choppers, unifacial blades, and scrapers" are found in the Coastal Plain, but can be attributed to the Paleoindian Period only on the basis of their "patination; some appear chalky, and display a general likeness to Paleo-Indian material of known antiquity" (Snow 1977:3).

Archaic Period

The Archaic Period, which dates from 10,000 to 3,000 B.P.[2], does not form a sharp break with the Paleoindian 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 animal. Archaic period assemblages, exemplified by corner-notched and broad-stemmed projectile points, are fairly common, perhaps because the swamps and drainages offered especially attractive ecotones.

The review of available survey data by Campbell et al. (1996:52-54) suggest that there was a noticeable population increase from the Paleoindian (seven Early Archaic components were noted) to the Late Archaic (20 Late Archaic components were noted). The increase in components over time certainly corresponds with generalized findings of other researchers, and may be tentatively associated with a greater emphasis on foraging. Campbell et al. (1996:52) note, however, that considerably fewer Early and Middle Archaic remains are found than seemingly should be present, based on comparable surveys elsewhere in the region. They suggest this may be the result of the sites being "buried in deep subsurface contexts" (Campbell et al. 1996:52). Unfortunately, they provide no substantive reasoning, geomorphological studies, or rationale for this assessment. Their comparative data consists of only one other survey, the Ebenezer Watershed (Fish 1976). Nor do they explore other explanations for the disparity between Archaic settlement in the Fort Stewart area and in this one other study area.

Diagnostic Early Archaic artifacts include the Kirk Corner Notched point. As previously discussed, Palmer and Bolen points may be included with either the Paleoindian or Archaic period, depending on theoretical perspective. As the climate became hotter and drier than the previous Paleoindian period, resulting in vegetational changes, it also affected settlement patterning as evidenced by a long-term Kirk phase midden deposit at the Hardaway site (Coe 1964:60). This is believed to have been the result of a change in subsistence strategies. Other hallmarks of the Early Archaic are often considered to include a continued reliance on high quality lithic raw materials, a highly curated tool kit, high geographic mobility, and periodic aggregation of band-sized groups (see Anderson and Hanson 1988; Daniel 1992).

Settlements during the Early Archaic suggest the presence of a few very large, and apparently intensively occupied, sites which can best be considered base camps. Hardaway might be one such site. In addition, there were numerous small sites which produce only a few artifacts — these are the "network of tracks"

[2] The terminal point for the Archaic is no clearer than that for the Paleoindian and many researchers suggest a terminal date of 4,000 B.P. rather than 3,000 B.P. There is also the question of whether ceramics, such as the fiber-tempered Stallings ware, will be included as Archaic, or will be included with the Woodland. Oliver, for example, argues that the inclusion of ceramics with Late Archaic attributes "complicates and confuses classification and interpretation needlessly" (Oliver 1981:20). He comments that according to the original definition of the Archaic, it "represents a preceramic horizon" and that "the presence of ceramics provides a convenient marker for separation of the Archaic and Woodland periods (Oliver 1981:21). Others would counter that such an approach ignores cultural continuity and forces an artificial, and perhaps unrealistic, separation. Sassaman and Anderson (1994:38-44), for example, include Stallings and Thom's Creek wares in their discussion of "Late Archaic Pottery."

mentioned by Ward (1983:65). The base camps produce a wide range of artifact types and raw materials which has suggested to many researchers long-term, perhaps seasonal or multi-seasonal, occupation. In contrast, the smaller sites may be thought of as special purpose or foraging sites.

There are several intensively occupied Early Archaic sites which are of special importance in our understanding of this period, including the Lewis East and Pen Point sites in South Carolina (Sassaman and Anderson 1994:84-85) and the Taylor Hill site in Georgia (Elliott and Doyon 1981).

Middle Archaic (8,000 to 6,000 B.P.) diagnostic artifacts include Morrow Mountain, Guilford, Halifax and Stanly projectile points. Ledbetter remarks that a possible regional variant includes the side-notched or corner-notched points similar to Halifax, as well as an elongated point known as the Brier Creek Lanceloate (Ledbetter 1995:12; Michie 1968; Sassaman and Anderson 1994:27). Also observed during this period is the MALA (Middle Archaic-Late Archaic) point, which are typically made from heat-treated chert and considered by some to be a regional variant of the Benton type (see Sassaman 1985; see also Sassaman and Anderson 1994:27-29 for a more updated discussion).

Much of our best information on the Middle Archaic comes from sites investigated west of the Appalachian Mountains, such as the work by Jeff Chapman and his students in the Little Tennessee River Valley (for a general overview see Chapman 1977, 1985a, 1985b). Closer to Georgia, there is Ledbetter's (1995:12) work at Pen Point on the Savannah River, as well as work at Fort Gordon (9CB81, see Braley and Price 1991), and 9RI178 (Elliott et al. 1994).

There is good evidence that Middle Archaic lithic technologies changed dramatically. End scrapers, at times associated with Paleoindian traditions, are discontinued, raw materials tend to reflect the greater use of locally available materials, and mortars are initially introduced. Curated tools are less common. Associated with these technological changes there seem to also be some significant cultural modifications. Prepared burials begin to more commonly occur and storage pits are identified. 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 the Carolinas, where axes, choppers, and ground and polished stone tools are very rare.

Coastal Plain settlement models for the Middle Archaic have traditionally focused on the near absence of diagnostic material. It has been suggested that the "Pine Barrens" were unattractive or could not support dense occupation. This view has been espoused by Larson (1980). As Sassaman and Anderson (1994:149) suggest, it may be that Middle Archaic groups avoided the coastal plain not because the area was impoverished, but rather because the available resources were patchy and this "patchiness" resulted in high "hidden" costs such as constant movement, increasing specialization, and the need to store larger quantities of food.

Sassaman and Anderson (1994:150-152) also briefly review the evidence supporting a focus on swamp floodplains during the Middle Archaic, noting that while such environmental settings can be difficult to identify, they do seem to be associated with large, multicomponent sites. In addition, they illustrate the mounting evidence to support seasonal rounds or seasonal transhumance between the coast and the interior (e.g., Milanich 1971).

The Late Archaic, usually dated from 6,000 to 3,000 or 4,000 B.P., is characterized by the appearance of large, square stemmed Savannah River projectile points (Coe 1964). In addition, research in the Georgia Coastal Plain suggests the presence of Gary Points, having a triangular blade, squared shoulders, a contracting stem, and a rounded or occasionally pointed base (see Smith 1978 for examples from Laurens County, Georgia). These Late Archaic people continued to intensively exploit the uplands although the available Fort Stewart data for this period reveal that the sites are spread over a variety of environmental zones with no obvious patterning (Campbell et al. 1996:52-53).

One of the more debated issues of the Late Archaic is the typology of the Savannah River Stemmed

and its various diminutive forms. Oliver, refining Coe's (1964) original Savannah River Stemmed type, developed a complete sequence of stemmed points that decrease uniformly in size through time (Oliver 1981, 1985). Specifically, he sees the progression from Savannah River Stemmed to Small Savannah River Stemmed to Gypsy Stemmed to Swannanoa from about 5000 B.P. to about 1,500 B.P. He also notes that the latter two forms are associated with Woodland pottery. This reconstruction is still debated with a number of archaeologists expressing concern with what they see as typological overlap and ambiguity. They point to a dearth of radiocarbon dates and good excavation contexts at the same time they express concern with the application of this typology outside the North Carolina Piedmont where it was originally developed (see, for a synopsis, Sassaman and Anderson 1990:158-162, 1994:35).

In addition to the presence of Savannah River points, the Late Archaic also witnessed the introduction of steatite vessels (see Sassaman 1993), polished and pecked stone artifacts, and grinding stones. Some also include the introduction of fiber-tempered pottery about 4000 B.P. in the Late Archaic (for a discussion see Sassaman and Anderson 1994:38-44; Sassaman 1993:16-41). This innovation is of special importance along the Georgia and South Carolina coasts.

Coupled with the presence of fiber-tempered Stallings or St. Simons pottery (Griffin 1943; DePratter 1991:159-162) are also a broad range of worked bone and shell items, such as engraved bone pins, whelk columella beads, and antler projectiles. Coupled with these artifacts are shell rings — dough-nut shaped heaps of shells ranging from only a few feet in height to over 20 feet (see Trinkley 1985 for a general overview). There is evidence that these shell rings represent gradually formed habitation sites with occupation taking place on the rings. The sites appear to reflect permanent, year-round occupation suggesting that the coastal St. Simons and coeval Thom's Creek (found primarily northeast of the Savannah River in South Carolina) groups were able to schedule their subsistence activities to allow stable settlements (Trinkley 1980).

There is evidence that during the Late Archaic the climate began to approximate modern climatic conditions. Rainfall increased resulting in a more lush vegetation pattern. The pollen record indicates an increase in pine which reduced the oak-hickory nut masts which previously were so widespread. This change probably affected settlement patterning since nut masts were now more isolated and concentrated. From research in the Savannah River valley near Aiken, South Carolina, Sassaman has found considerable diversity in Late Archaic site types with sites occurring in virtually every upland environmental zone (Sassaman et al. 1990:280-300). He suggests that this more complex settlement pattern evolved from an increasingly complex socio-economic system. While it is unlikely that this model can be simply transferred to the Coastal Plain of Georgia without an extensive review of site data and micro-environmental data, it does demonstrate one approach to understanding the transition from Archaic to Woodland.

Woodland Period

Sassaman (1993:55) recalls the cautions of Joseph Caldwell, who found "the regional landscape of the Early Woodland ceramic traditions" a "fascinating array of local developments and diverse extralocal influences." As a consequence, the Early Woodland becomes quickly confused and difficult to interpret.

As previously discussed, there are those who see the Woodland beginning with the introduction of pottery. Under this scenario the Early Woodland may begin as early as 4,500 B.P. and continued to about 2,300 B.P. Diagnostics would include the small variety of the Late Archaic Savannah River Stemmed point (Oliver 1985) and pottery of the Stallings, St. Simons, and (to a lesser extent) Thoms Creek series (Griffin 1943; Trinkley 1976; DePratter 1991:159-162). The fiber-tempered Stallings and St. Simons wares and the sandy paste Thoms Creek wares are decorated using punctations, jab-and-drag, and incised designs (Trinkley 1976).

Others would have the Woodland beginning about 3,000 B.P. with the introduction of the Refuge wares, also characterized by sandy paste, but often having only a plain or dentate-stamped surface (DePratter 1976, 1991:163-167; Waring 1968).

There is evidence that the punctated and dentate surface decorations are gradually replaced by plain and simple stamped treatments. Sassaman et al. (1990:191) report a distribution similar to the earlier fiber-tempered and Thom's Creek wares, and suggest that the Refuge wares evolved directly from these earlier antecedents.

On the Georgia coast, Refuge has been subdivided into three subphases, with plain and dentate stamping found during the entire period. Toward the end, linear and check stamping is introduced, sometimes with grog or clay tempering. Typically these sites are found on ridges or other high, sandy ground, although DePratter also notes that many sites have been inundated by the rising sea level and are situated in the marsh (DePratter 1976:6-8).

Oemler ceramics, which admittedly are poorly understood (DePratter 1979:177; see also DePratter 1991:42-59), are likely a Refuge-Deptford transition. DePratter describes the pottery's check stamping as consisting:

> of small, rhomboid or diamond checks, carefully applied to the vessel surface without overstamping. The [Oemler] complicated stamping is somewhat unusual, consisting of small, carefully executed line-filled triangles, nested diamonds, and other motifs (DePratter 1979:117).

He observes that the largest sample comes from the Oemler site and that other researchers have occasionally called the pottery Deptford Geometric Stamped. The pottery is so uncommon that it may well represent only a variety of either Refuge or Deptford.

In spite of the relative lack of detailed investigations at Early Woodland sites, it seems likely that the subsistence economy was based primarily on deer hunting and fishing, with supplemental inclusions of small mammals, birds, reptiles, and shellfish. This is based on an impression that there was a continuation of a generalized Late Archaic pattern, which may or may not be appropriate.

Fort Stewart has apparently produced no Refuge sites and Campbell et al. (1996:60) doubt that such sites will exist in the Coastal Plain unless possibly associated with earlier fiber-tempered sites. They note, however, that the Georgia State Site files report the presence of at least four Refuge/Oemler components at sites on Fort Stewart (Campbell et al. 1996:57). Consequently, it is difficult to assess the potential for Refuge sites at Fort Stewart.

Somewhat more information is available for the Middle Woodland, typically given the range of about 2,500 B.P. to about 1,200 B.P. The most characteristic pottery of this time period is Deptford, although both Swift Creek and Wilmington are likely late additions. Regardless, the Middle Woodland is best understood in the context of Deptford, which has been carefully described by DePratter (1979:118-119, 123-127), who suggests two divisions with check stamping and cord marking gradually being supplemented by complicated stamping. The introduction of clay or grog tempered Wilmington wares follows on the heels of the Deptford phase.

We do not, however, mean to imply that the origin of the Middle Woodland is well understood. In fact, Sassaman takes some pains to emphasize that the transition from Refuge to Deptford is not well understood:

> the Refuge-Deptford problem is the result of numerous regional processes that converge in the Savannah River region between 3000 and 2000 B.P. The sociopolitical entities that existed on the coast and in the interior during the fourth millennium dissolved after about 2400 B.P., resulting in the dispersal of small populations across the region. . . Pottery designs changed from highly individualistic punctation and incision to the (seemingly) anonymous use of dowels for stamping. . . the use of a carved paddle for simple stamping should mark the "blending" of Refuge and Deptford culture, or, more accurately, reflect the subsumption of

> Refuge culture by the expanding Deptford complex. (Sassaman 1993:118-119).

The work by Milanich (1971) and Smith (1972), coupled with the considerable additional site-specific research (see, for example, DePratter 1991; Sassaman 1993:110-125; Thomas and Larsen 1979) provides an exceptional background for this particular phase. Milanich's (1971) interpretation of a coastal-estuarine settlement model with interior occupation limited to short-term extractive activities, while still useful, has been modified through the discovery of a number of interior base camps. In fact, there seems to be evidence for a number of interior seasonal or perhaps even permanent base camps, although there is as yet no convincing evidence of horticulture. Anderson (1985:48) provides a brief overview of some very significant concerns. He notes that Milanich's interpretation that the interior river valleys were used by small, residentially mobile foraging groups which dispersed from large coastal villages is clearly not correct. In fact, just the opposite appears more likely, with coastal use and settlement being seasonal (Anderson 1985:48-49).

DePratter (1979:119, 128-131; 1991) takes the position that Wilmington pottery post-dates Deptford and ushers in the use of grog or clay as a tempering material in the late Middle Woodland. The check stamping and complicated stamped motifs found in the Deptford continue, except with clay tempering, for a short time. These wares are called Walthour by DePratter (1991:174-176), although they exhibit a paste virtually identical to Wilmington wares. Regardless of what they are called, they apparently existed for only a short period of time before being completely replaced by cord marking (DePratter 1979:119).

Wilmington phase sites are rather poorly understood in the Georgia Coastal Plain. Not only has there been little effort to develop settlement models incorporating the Wilmington, there is very little technological research on the pottery itself. The potential importance of the Wilmington phase is perhaps evidenced by Snow's (1977) survey of the Ocmulgee Big Bend area, where large quantities of what he called "Ocmulgee I" pottery was found. He specifically states that this ware "is not Wilmington" (Snow 1977:42), noting that while there is some clay tempering (certainly not the abundant grog tempering of classic Wilmington), much of the pottery has a sandy paste (Snow 1977:36). Perhaps the most distinctive characteristic of this pottery (which is associated with at least one burial mound) is a heavy folded rim. Folded rims seem to gradually drop out, while the paste becomes increasingly more gritty in succeeding Ocmulgee II and III types.

Curiously, coupled with the coastal Wilmington material is what the W.P.A. researchers called Chatham County Cord Marked (DePratter 1991:179-180), a grit-tempered (rather than clay-tempered) heavy cord marked pottery. DePratter remarks this is possibly related to the "sand tempered" pottery that Stoltman (1974:63), further up the Savannah River, called "Wilmington."

It seems that Georgia, just like South Carolina and North Carolina, is struggling to comprehend, and deal with, a broad array of Middle Woodland cord marked pottery.

Although Deptford pottery is well recognized, the associated lithic technology is not. For Florida, Milanich and Fairbanks (1980:75-76) mention only that "medium-sized triangular" points are present. Yadkin-like triangular points are reported to be found with Wilmington sites (Anonymous 1940). Snow (1977:Figure 47) reports a broad range of small triangular points with his Ocmulgee I, II, and III cord marked pottery. The bulk of these appear to resemble more traditional Yadkin and Caraway points (Coe 1964:30-32, 49).

The Middle Woodland cannot be fully appreciated without reference to Hopewellian influences, whether the presence of coastal sand burial mounds and their evidence of status differences (e.g., Thomas and Larsen 1979) or the presence of occasional exchange goods. Sassaman et al. note that while there is a lack of "obvious" Hopewellian influence in the Savannah area, there is nevertheless evidence of a "higher order of sociopolitical complexity" (Sassaman et al. 1990:14). They note that the broad similarities in ceramic design evidence the movement of ideas, or "interprovincial

integration," not seen in the Early Woodland. The presence of coastal shells found at interior sites demonstrates the movement of goods.

At Fort Stewart the Middle Woodland period is better represented than the Early Woodland. Twenty-three sites have produced Deptford remains. Of these 23 Deptford sites, four also produced Wilmington pottery, and one produced Refuge and Wilmington pottery in addition to Deptford pottery (Campbell et al. 1996:56-57) Two sites noted by Campbell et al. (1996:57) produced only Wilmington pottery. Campbell et al. (1996:57) fail to discuss lithic resources, so it is not possible to ascertain if Middle Woodland lithic scatters have been encountered.

In some respects the Late Woodland (1,200 B.P. to 400 B.P.) may be characterized as a continuation of previous Middle Woodland cultural assemblages. While outside the Carolinas and Georgia there were major cultural changes, such as the continued development and elaboration of agriculture, the coastal South Carolina and Georgia groups settled into a lifeway not appreciably different from that observed for the previous 500-700 years. From the vantage point of Middle Savannah Valley Sassaman and his colleagues note that, "the Late Woodland is difficult to delineate typologically from its antecedent or from the subsequent Mississippian period" (Sassaman et al. 1990:14). This situation would remain unchanged until the development of the South Appalachian Mississippian complex (see Ferguson 1971). Anderson (1994:366-368) provides a basic review of the Late Woodland and Mississippian ceramic sequence at the mouth of the Savannah River. This review is particularly useful since it also compares and contrasts these developments to those in the middle and upper reaches of the Savannah (Anderson 1994:368-377).

Milanich (1971:148-149) and Caldwell (1970:91) saw the St. Catherines pottery, which seemingly characterizes the Late Woodland, as an important aspect in the gradual progression from Deptford to Wilmington to St. Catherines to Savannah. Perhaps the most succinct summary of the Georgia Late Woodland St. Catherines phase is that offered by DePratter and Howard (1980:16-17). Significantly, they note that most of the Georgia data comes from burial mound excavations, "because only limited village [and presumably shell midden] excavations have been conducted" (DePratter and Howard 1980:16). Even with burials there is a limited range of artifact types — shell beads, worked whelk shell bowls or drinking cups, bone pins, and triangular projectile points. Not only is little known about village life, nothing is known concerning residential structures and there is no good evidence of agricultural crops. Once again, the Late Woodland is presented as little more than an extension of the previous Middle Woodland lifeways.

DePratter (1979:119) provides a generalized introduction to the St. Catherines phase, noting its original definition by Caldwell (1971) and remarking that the ceramics are:

> characterized by finer clay tempering than that of preceding Wilmington types and by the increased care with which the ceramics were finished. The lumpy contorted surface of Wilmington types was replaced by carefully smoothed and often burnished interiors and exteriors (DePratter 1979:119).

DePratter also notes that the temper in the St. Catherines pottery consists of "crushed sherd or crushed low-fired clay fragments" (DePratter 1979:131). One of the few studies of prehistoric temper which involved detailed chemical and petrographic analyses included a sample of six St. Catherines sherds (Donahue et al. n.d.) The study found that the trend toward decreasing grain size of the aplastic component, begun in the Middle Woodland, continues into the Late Woodland. In contrast, the grog inclusions are coarse, ranging from about 2 to 3 mm, and they contain quartz grains (perhaps reflecting the temper of the crushed sherds).

More recent investigation of St. Catherines pottery in South Carolina found that while there is considerable variability in both size and frequency of temper, there is no compelling evidence that sherds were being crushed and used as temper. The most likely explanation for the observed similarity of both paste and temper is that the temper represents dried lumps of clay

which have been incorporated back into the clay during the forming of vessels. On the other hand, the same study also found that there appear to be distinct chemical differences between the paste and temper. This suggests that the dried clay used as tempering was perhaps "left-over" from earlier potting episodes (Trinkley and Adams 1994:58-60).

Although the conventional wisdom is that the St. Catherines phase drew to a close around A.D. 1150, there is mounting evidence that the phase may extend into the thirteenth or fourteenth century A.D. (see Trinkley and Adams 1994:108-110, 114-115). There may be a blurring of Middle and Late Woodland lifeways well into later periods. The resulting cultural conservativism may help explain the presence of relatively few large Late Woodland villages and the apparent absence of corn agriculture until very late along the coast.

On the coast, Hopewellian influences may be more obvious than originally thought, if the multitude of sand burial mounds being investigated by the American Museum of Natural History are as early as reported. For example, the investigations at South End Mound II on St. Catherines Island suggest the earliest burial, placed in a pit about A.D. 1000, was associated with a copper sheet, had copper earspools, and included a diabase-like pendant (Larsen and Thomas 1986:25).

Moving away from the coast and into the inner Coastal Plain there is considerably less data. It is difficult, for example, to determine how far inland St. Catherines wares are reported, or if they exist at all. Once again relying on Snow's examination of the Ocmulgee Big Bend area, there is no evidence of St. Catherines pottery. Instead, it seems that the cord marked Ocmulgee wares fill the gap. Snow even mentions that his Ocmulgee III pottery, which is found with small triangular points, shows "some traits suggestive of closer ties with coastal Savannah II Cordmarked ceramics" (Snow 1977:43), suggesting that the Ocmulgee II wares may be Late Woodland. This may help explain why no St. Catherines sites have been found at Fort Stewart (Campbell et al. 1996:60), although clearly the lack of detailed surveys cannot be ignored.

Better known is the Swift Creek Phase, often viewed as either late Middle Woodland or Late Woodland. Swift Creek materials extend from the Gulf of Florida, where the phase was first popularized (Willey 1949:378-383) into the coastal plain and piedmont of Alabama, Georgia, and South Carolina. Diagnostic artifacts include pottery with intricate, well-executed, curvilinear complicated stamped motifs (for a brief synthesis of the Swift Creek wares, see Williams and Thompson 1999:122-125). Also present are occasional suggestions of Hopewell ritual, especially among the burials. Sites include semi-permanent villages, some with burial mounds and occasionally small platform-like mounds, as well as small camps (Jefferies 1994; Keller et al. 1962; see also Sears 1956:53-54, Sassaman et al. 1990:205-206, Williams and Elliott 1998 for regional overviews). Although there are few appropriate local studies (Williams and Elliott 1998), Snow does illustrate a number of early and late Swift Creek sherds from the Ocmulgee Big Bend area (Snow 1977:Figure 6a, 7a, 7b). This suggests that Swift Creek phase sites may be found in the Fort Stewart area.

South Appalachian Mississippian

As Schnell and Wright (1993:2) observe, "Mississippian" means different things to different people — even to its earliest researchers. To Willey (1966) it meant a particular group of traits. To Griffin (1985) it meant a complex social and technological interaction sphere. To Smith (1986) it was defined as an adaptive strategy. The meaning is further distorted, or at least affected, when the issue is viewed from a strict temporal or chronological orientation, such as this presentation (since to us, the period covers the period from about A.D. 900 to A.D. 1500).

The Mississippian is viewed rather basically by Campbell et al. (1996:61-62). They focus on a simple coastal chronology based almost entirely on the results of excavations at Irene (Caldwell and McCann 1941) and the resulting synthesis by DePratter (1979:Table 30; 1991:183-193). In this scenario the Savannah Phase, consisting of three subphases, is followed by the Irene, broken into two subphases. While following essentially the same sequences, Anderson (1994:366-368) provides considerably more detail.

The Savannah, characterized by cord marking, is seen as developing from earlier cultures. Present are flat-topped temple mounds, although these are seen by some researchers to be less common in the Altamaha region. While the settlement system is very similar to that of the Late Woodland, there are also nucleated settlements found near estuaries and along freshwater rivers further inland. Although agriculture is seen by many as almost essential, there is no good evidence for corn or other domesticated crops.

Savannah II is distinguished by the introduction of check stamping and Savannah III is defined by the presence of complicated stamping. The Savannah III Complicated Stamped pottery is primarily curvilinear, often of concentric circles or oval motifs. Sassaman et al. (1990:207) suggest that the current temporal ranges are likely too restrictive for these subphases and suggest instead broader period of perhaps A.D. 1100 to 1200 for Savannah II and perhaps A.D. 1200 to 1300 for Savannah III.

The Savannah Phase, according to Campbell et al. (1996:64), is the best represented of any period at Fort Stewart, with 35 sites producing Savannah pottery. They also note that not only are the sites more numerous, but the collections from the sites are larger, "suggesting that the Fort Stewart/Hunter Army Airfield area was a place more heavily occupied by Savannah populations than the earlier groups discussed above (Campbell et al. 1996:64). Most important among the Savannah sites appears to be the Lewis Mound (9BN39) and associated habitation area.

The Savannah phase gives way to what is often called the Irene Phase, probably beginning about A.D. 1300. The Irene I Phase is identified by the appearance of Irene Complicated Stamped pottery using the filfot cross and line block motifs. Not only are these motifs different from the earlier Savannah Complicated Stamped designs, but the Irene ware is characterized by grit inclusions and a coarse texture, compared to the Savannah's sandy inclusions and fine to medium-grained paste.

Also present in Irene collections are a range of rim decorations, including nodes, rosettes, and fillet appliques. Although incising is found in very low quantities during this early period, the succeeding Irene II phase is characterized by bold incising. The mouth of the Savannah River, however, was likely abandoned by the end of the Irene I Phase since little incising is found in this area. Anderson (1994:290-294) provides a detailed discussion of the collapse and abandonment of the Irene site, focusing on the dramatic changes and their meaning in a broader socio-political context.

Larson (1955) sought to distinguish his central coastal Pine Harbor incised material from the Irene wares of the northern coast. Braley (1990:98) suggests that the Pine Harbor material is both geographically and temporally distinct from Irene. He also suggests that the presence of the Pine Harbor Phase on the middle coast may help explain the apparent abandonment of the Savannah area, suggesting that the coastal groups shifted southward in order to make themselves more accessible to the interior Oconee chiefdoms (Braley 1990:99).

The situation, however, become considerably more muddled when the view is shifted inland — to the Pine Barrens in the vicinity of Fort Stewart, for example. Schnell and Wright explain that "almost nothing can be found in the literature" (Schnell and Wright 1993:41).

Using data from several Ocmulgee Big Bend sites, they note that there is a small collection of cord marked pottery, sometimes incorporated in an assemblage of plain and roughened wares, which dates from perhaps A.D. 800 to A.D. 1400 — falling within the temporal limits of the Mississippian. They note that Crook, who defined a Middle Ocmulgee Phase dating from A.D. 200 to about 900 and a Late Ocmulgee Phase from about A.D. 900 to 1600, distinguishes the two by increasing frequencies of triangular points and cord marked pottery. They also note that Crook suggests these occupations are associated with "conservative" cultural adaptations — an argument similar to that advanced for the late occurrence of St. Catherines wares along the South Carolina coast.

Snow, also exploring the Ocmulgee and Satilla river drainages, defines what he calls the Square Ground Lamar ceramic assemblage which apparently is coeval with late Irene (Snow 1990). Prior to this, the area is

apparently dominated by the cord marked Ocmulgee III pottery. The Square Ground wares have 10 to 12 incised lines around the rim and below a stamp consisting of a central dot with four lines radiating out. Each of the resulting four quadrants is usually filled with chevrons (Snow 1990:Figure 5). He suggests that the "Square Ground Lamar pottery may equate with [the] Hitchiti people" of the lower Ocmulgee (Snow 1990:87).

The simple importance of these discussions is that there is far too little information presently available to allow any clear or certain understanding of what may be present in Fort Stewart area. Consequently, while Campbell et al. (1996:68) note that only four Irene sites have been found at Fort Stewart, it seems premature to argue that Lamar influences are rare, or that the Pine Barrens were deserted, or even sparsely occupied.

Protohistoric and Historic Contact

The Protohistoric ceramic assemblages along the immediate coast are typically identified as Altamaha (DePratter 1979), King George (Caldwell 1943), San Marcos (Smith 1948), and Sunderland Bluff (Larson 1978). The period is often dated from about A.D. 1550 to 1700, although Green (1991:106) argues that minimally it should be extended to 1715 in order to include the Yemassee-produced pottery of South Carolina and perhaps even as late as 1763 to coincide with Smith's (1948) St. Augustine period.

Regardless of precise dating, the ware is thought to include complicated stamping (including rectilinear and curvilinear motifs), check stamping, incising, plain, burnished plain, and a red filmed ware. Green suggests a continuum from Irene to Altamaha. Vessel forms include jars, bowls, plates, and pitchers. Some include strap and loop handles as well as foot rings, clearly revealing a strong European influence. The San Marcos pottery is associated with limestone tempering, while the Altamaha and King George wares exhibit fine grit or sand.

Snow (1990:92-93) reports a dramatic decrease in the number of Altamaha sites compared to the preceding Square Ground sites in the Pine Barrens of the Ocmulgee Big Bend area. He also notes that in addition to Altamaha ceramics, there are also examples of "Miller ceramics from the Apalachee region of northwest Florida," "a smoothed-over check stamped ware, similar to Leon Check Stamped from mission sites in north Florida" and even "Ocmulgee Check Stamped known from the Macon Plateau site." Also present are "European trade items such as glass beads and copper" (Snow 1990:93). All are representative of European contact and suggest that there was considerable movement late in the history of the region. From the historic period, Snow reports the presence of both Ocmulgee Fields, Chattahoochee Brushed, Mission Red Filmed, and Leon-Jefferson Complicated Stamped pottery — all presumably associated with Creek sites (Snow 1990:93). Unfortunately, little more than the presence of these various wares is known about the historic or contact period sites in the area.

Historic Overview

The Native American population of southeastern North America first encountered Europeans during the 1539-1542 Spanish expeditions of Hernando de Soto. It was shortly after that, in 1566, that the Spaniard Pedro Menendez de Aviles, founder of St. Augustine, met with the Guale Indians on St. Catherines Island and established a small outpost and mission on the island (Coleman 1960:1; see also Jones 1978). Georgia's coast began to export grain and citrus fruits and by the early 1600s, missions were well established in fertile south and central Georgia (Hodler and Schretter 1986:70; see also Thomas 1987 and Larsen 1990).

By 1663 the ownership of lands within the confines of Georgia would become the center of great debates, dialogues, and eventually armed combat between Spanish and English interests. In granting the Carolina colony, Charles II had established that Spanish-held St. Augustine would constitute the southern boundary of the colony. With the presence of Spanish presidios and intensified English trading with Native American populations going on in the lands between Charles Towne and St. Augustine, tensions mounted between the two European powers.

The Origins of Georgia

The settlement of the Georgia colony is attributed to a perceived need by the English Crown to establish a military buffer zone between Spanish lands to the north of the Altamaha River and the English settlement of Charles Towne along the Atlantic coast of present day South Carolina (Coleman 1960:2). There was, as well, a strong Carolinian interest in tapping Georgia's potential for the deer skin trade and the use of Native Americans in military alliances against the other European powers. By effectively placing these lands under one sovereign, i.e., England, a number of these problems between England and Spain would be resolved.

The charter for the Georgia colony was granted in July of 1732, and by November James Oglethorpe set sail from England with the first shipload of colonists (Coleman 1960:5; DePratter and Howard 1980:42). South Carolina had relinquished territory to create Georgia and the new colony's original western boundary was the "South Seas," or the Pacific Ocean. By 1763, the boundary became the Mississippi River and, in 1802, Georgia ceded to the United States what would become Mississippi and Alabama and assumed its present form (Hodler and Schretter 1986:71).

The original settlers, numbering from 114 to 125 souls, established a settlement 29 km from the coast along the Savannah River on Yamacraw Bluff on February 12, 1733 (Coleman 1960:5; DePratter and Howard 1980:42; Hvidt et al. 1980:35).

Although Oglethorpe was appointed as representative for the colony's Trustees, he actually held no legislative or authoritarian powers over the colonists. Yet, he attempted to establish the Georgia Colony in a more philanthropic manner than its neighboring colony of Carolina to the north (Coleman 1960:8). Oglethorpe's philanthropic views may have been in direct response to problems encountered by the Carolina Proprietors. The trade in deer skins and the use of Native Americans as slaves during the early colonial period had caused personal and political problems for South Carolina's elite rulers (Weir 1983). Oglethorpe hoped to eliminate this and problems associated with the ownership of African American slaves within the Georgia colony.

While South Carolina became quickly dominated by large plantations, primarily indigo and rice, which operated under the forced labor of thousands of African Americans, Oglethorpe envisioned a "kinder and gentler" colony of small land owners growing a broad range of crops. He foresaw land granted in small parcels and ensured that both slavery and rum were outlawed in 1736 (DePratter and Howard 1980:43).

Unfortunately Georgia was unable to retain its vision as a colony of sober men living off their own labor and rewards contributed through the working of small farms. Changes within the colony's structure were already evident when, in 1743, Oglethorpe was replaced by the Board of Trustees for the colony with William Stephens. As early as 1740 maximum land holdings were increased to 2000 acres, allowing the formation of small plantations (DePratter and Howard 1980:44). By 1750 the ban on the importation of slaves was dropped. Elite land owners and investors from South Carolina began to purchase lands along the Savannah River (Rowland 1987), and the timbre of Georgia society began to change. By 1750 African Americans constituted perhaps one third of Georgia's 3,000 residents (Coleman 1960:11).

In 1752 the Royal trusteeship charter expired and Georgia became a crown colony. In 1758 the Georgia Assembly established a governmental framework as part of the official church act. The province was divided into eight parishes (W.P.A. Writers' Program 1990:39). The tract which is today Fort Stewart lay primarily in the parishes of St. Johns and St. Phillips, with some western portions falling into St. Andrews Parish (Campbell et al. 1995:73).

The 1740s and 1750s were a period of growth in Georgia. Under the influence of her neighbor to the north large plantations began to dot the landscape. The introduction of upland and intertidal rice agriculture, the advent of indigo production, and the naval stores industry, brought on by world wide military and economic events (Coclanis 1989; Weir 1983), would rapidly move Georgia into the mainstream of southern plantation agronomic production. Prior to the grant for the Georgia colony, bounties were offered by England's parliament to encourage the growth of indigo and the production of naval stores. In 1766 the Georgia

assembly, in an effort to infuse the naval stores industry, passed legislation which specified standards and volumes for the industry (Thomas 1975:2). This would enable Georgia to compete with world markets. Eventually Georgia evolved into a significant colony in its own right.

By 1776, Georgia retained very little of its pre-colonial concepts and contained a population of 40,000 to 50,000 people. Approximately half of that number were African American slaves (Coleman 1960:13; DePratter and Howard 1980:44).

Liberty County was established in 1777. At that time it included a part of present-day Bryan and Long counties, as well as all of McIntosh County. This area was settled early during the proprietary period, most notably by South Carolinians. Puritans from the abandoned town of Dorchester, South Carolina established the river port of Sunbury for the growth and export of rice, indigo, cotton, and lumber (Looper 1982:2, Groover 1987:33-34).

Economic factors had also come into play concerning the inland agricultural development of the colony. The inland areas of the state were considered better suited for the cultivation of upland cotton as opposed to rice, indigo, and sea island cotton, which were the staple crops grown along the coast. The relative position of Liberty County in the flat pine lands of Georgia allowed the area to rapidly diversify its agricultural base. Initially, the milling of lumber and the naval stores industry were important economic commodities (Groover 1987:33-34).

According to Herndon, "in the last two decades before the Revolution Georgia exported over 21,000,000 feet of lumber, 10,000,000 staves, and 36,000,000 shingles" to England (Herndon 1968:427). As well, both inland and intertidal rice, indigo, and long and short staple cotton were early crops. With the invention of the cotton gin by Eli Whitney in Savannah in 1793 new impetus was given to the commercial growth and export of upland cotton.

Yet, it was principally because of the early diversification of Liberty County's agricultural base that the naval stores industry remained in its infancy. The relationship between the naval stores industry and the production of other agricultural commodities is best explained by Hernden (1968) who states that:

> [a]n examination of the manner of producing turpentine, tar, and pitch will indicate the relationship between the production of naval stores, the expansion of the rice and indigo plantation, large and small, and the lumbering industry. Of the three products that constituted the naval stores industry turpentine was of least interest as Colonial Georgia exported less than one-seventh as much turpentine as tar and pitch. Turpentine is a sap of the pine tree obtained by making incisions, or boxes, at the base of the trunk of the tree. These boxes were usually made in January and February and the ground at the foot of the tree was cleared of leaves, brush, and undergrowth . . . Around the middle of March the sap began to distill, circulation commenced and increased as the weather became warmer; the sap boxes had to be emptied five or six times or more per season and the upper edge of the boxes chipped each week to keep the sap running. When the chill of the frost severely checked the circulation the operation was discontinued and the remainder of the year was spent in preparatory labor for the following season. The production of turpentine was a year round job rather than merely a wintertime activity and since a tree produced turpentine for several years this activity did not in itself aid in the clearing of land; consequently the turpentine industry never grew past the embryo stage.
>
> The manufacture of tar and pitch were wintertime activities, provided a supplementary income, and aided in

> the "improving" or clearing of land. . . . To procure the tar from the wood a kiln was prepared in the following manner: the wood was cut into pieces two are three feet long and about three inches thick and stacked on a raised concave earthen mound, the center of which was connected to a ditch or hole on the outside by a conduit; the pile of wood was covered with a layer of pine leaves and earth and a fire started at the top of the kiln. The fire was allowed to penetrate to the bottom with a slow and gradual combustion, which forced the tar from the wood causing it to run down to the bottom of the kiln and out into the ditch or hole. The kiln was watched day and night while burning to keep the fire from breaking out and consuming the wood without producing tar. The average yield was one barrel of tar to one cord of wood. Pitch was made from tar by heating it in furnaces or large kettles . . . (Hernden 1968:428-430).

As seen in Table 4 the naval stores industry never became a truly viable industry during the Colonial Period. Between 1755 and 1775 Georgia exported less than 1,000 barrels of turpentine, approximately 3,000 barrels of pitch, and a little over 4,400 barrels of tar.

It was during the post-Revolutionary War period that we see considerable evolution in the establishment of Georgia's counties. As Campbell and her colleagues observe, poor transportation networks and the increased need for governmental services lead to the creation of most new counties. Bryan County was created in 1793 and Tattnall was created in 1801 (Campbell et al. 1995:98).

The Revolutionary War

Within the southern colonies the War for American Independence was similar to that of the American Civil War. Quite often family loyalties were divided between by class and family (Coleman 1960:17). Other than the capture of major population centers such as Charles Town, Savannah, and Augusta by the British, much of the war was a series of small, local engagements fought between loyalist troops and their patriot counterparts (Coakley 1989; DePratter and Howard 1980:44-45).

For most of 1779 the British held Savannah and the surrounding ground. The study area in 1779 is shown in Figure 12. In early fall of 1779 American and French troops made an abortive attempt to take Savannah. Among the 750 French and American casualties was Count Casimir Pulaski, for whom Fort Pulaski was named. It was not until July of 1782 that the British abandoned Savannah, ending British occupation of Georgia (Coulter 1960:146-147; DePratter and Howard 1980:45). Other nearby skirmishes include the 1776 Battle of the Rice Boats at Tybee Island and the 1778 Battle of Bulltown Swamp at Midway.

Table 4.
Naval Stores Exported from Georgia (1755-1775)

Yr	Turpentine (bbls)	Pitch (bbls)	Tar (bbls
1755	n/a	n/a	45
1756	n/a	n/a	n/a
1757	n/a	n/a	129
1758	n/a	n/a	n/a
1759	n/a	83	35
1760	n/a	n/a	425
1761	160	n/a	235
1762	n/a	n/a	246
1763	8	23	175
1764	19	n/a	359
1765	n/a	n/a	486
1766	82	506	723
1767	88	627	387
1768	202	496	167
1769	68	492	138
1770	103	80	105
1771	45	193	102
1772	40	364	298
1773	n/a	n/a	n/a
1774	24	40	132
1775	44	84	217
Total	877	2,988	4,404

Source: Hernden 1968:431.

Figure 12. A portion of Hinton's 1779 *A New and Accurate Map of the Province of Georgia* showing the project area (no scale provided on original map).

Although Oglethorpe had established a number of defensive communities west of Savannah, such as Fort Argyle on the Ogeechee River (see Elliott 1997), most of these settlements failed due to the poor agricultural conditions of the Pine Barrens and lack of communication and readily available shipping route to Savannah (DePratter and Howard 1980:43; see also Figure 40). Yet, they did set a precedent for settlement once the Revolutionary War was resolved.

After the war, land at Fort Argyle changed hands many times, until 1781, when 500 acres of land were put up for sale (Campbell et al. 1996:103). After 1800, the "Fort Argyle" was popularly recognized as a reference to the neighborhood of the old fort site (Campbell et al. 1996:104). Fort Argyle property continued to change hands until after the Civil War, when it was listed as having a population of 15 (Campbell et al. 1996:121). After the 1890s, the Fort Argyle land was used by timber and turpentine industries, and in the late nineteenth century, contained a brick factory (Campbell 1996:128-129). It is today part of Fort Stewart.

With the war's conclusion, major treaties and concessions from the Cherokee and Creek Indian tribes (1782-1804) allowed the full scale development of lands within central and eastern Georgia. While these cessions have no direct bearing on our understanding of the Fort Stewart area, they are a significant aspect of Georgia history. Perhaps the most succinct overview is that offered by Green (1979:24-41). He recounts the early, and peaceful start of English-Creek relationships with the 1733 and 1739 treaties skillfully brokered by Oglethorpe and explores the gradual deterioration of relationships as the English greedily lusted for expansion. Green also explores the careful balance between the French, Spanish, and English which Creek sought to maintain in order to ensure their own survival (Green 1979:26). As this power balance collapsed, the English availed themselves of the Creek's weakness. Falling deeply into debt, the Creek nation ceded

additional land on the Upper Savannah.

During the American Revolution the British influence among the Creeks was skillfully maintained by Alexander McGillivray, a Creek with mixed Scots and French ancestry. Even after the Revolution, McGillivray continued to be an important council to the Creeks, as they strove to balance the power of the Americans and the Spanish. By 1812 the Creeks were deeply divided by a factional conflict which escalated into a civil war between those best described as classic nativists and those who were Anglicized. This civil war became the Creek War in 1813 as those land-hungry Americans, like Andrew Jackson, looking for a reason to intervene found an excuse to wage a "just war." Tennesseeans, Georgians, and Mississippians jumped at the excuse to wage a "war of extermination" in order to free additional land. After the death of at least 3000 Creek nativists, the Treaty of Fort Jackson was signed in August 1814.

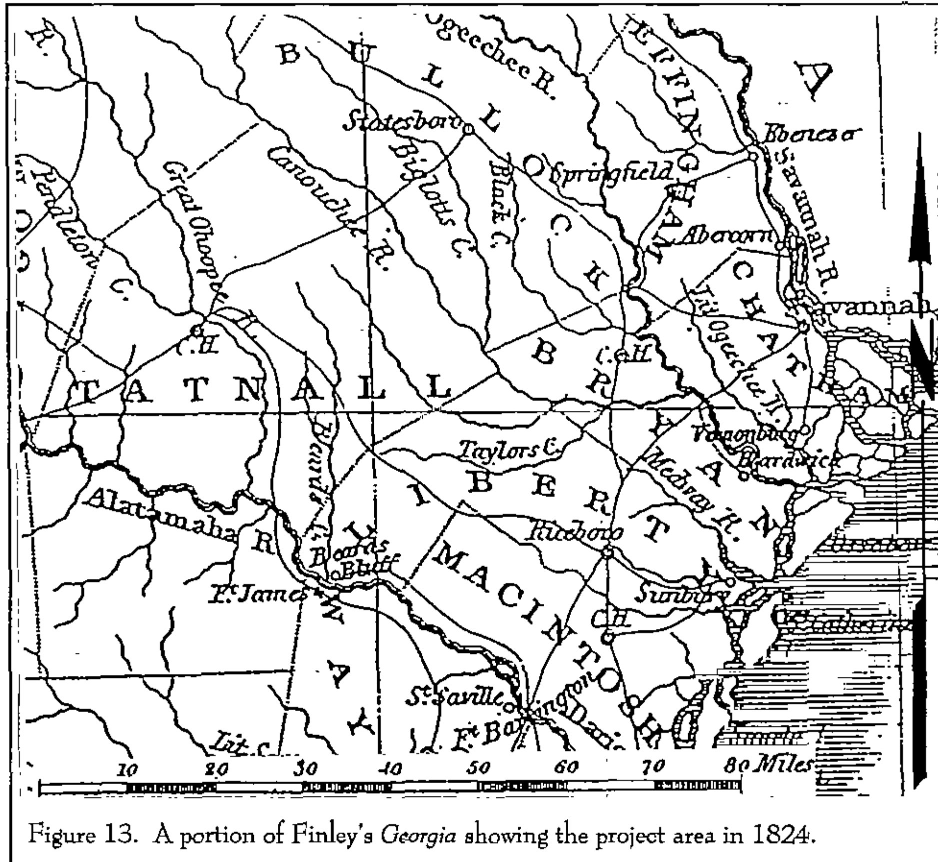

Figure 13. A portion of Finley's *Georgia* showing the project area in 1824.

The Antebellum Period

By 1820, 60% of upland farmers were growing cotton, and slavery played an ever increasing role in that growth, despite bans on slave importation during the last decades of the eighteenth century. By 1820, 44% of Georgia's population was black (DePratter and Howard 1980:45). Over 70% of the population in the area which would become Liberty and Long counties were former African American slaves. Further inland, in the "Pine Barrens," the proportion of slaves dropped to less than 10% (Hilliard 1984:Map 30).

During the antebellum Georgia began to increase its economic share of the American export market. The forced removal of all Native Americans from the state in 1838 accelerated the settlement of interior lands (DePratter and Howard 1980:45). Already established river and road transportation networks (Figure 13) were augmented by railroads which connected Georgia's major port city, Savannah, with other major urban centers within the state and region. By the time of the Civil War, railroads connected Savannah to Augusta, Macon, and Waycross. Waycross provided access to coastal Brunswick and Atlanta was accessed by both Augusta and Macon. Branch lines tied together Athens, Columbus, and Albany, and Dalton in the northwest corner of Georgia.

With the advent of industrialization Georgia's economic base began to diversify. Textile mills, tanneries, lumber mills, and turpentine distilleries became established throughout the state.

In 1850, Liberty County had a population of 2,020 whites and 5,908 black slaves. The population, however, had increased by only 9½% from 1840. There were 244 farms, incorporating 38,563 improved acres and 303,518 unimproved acres, for an average farm with 158 acres of improved land valued at $3,317. The county boasted 1,100 horses, 15,450 mules, 4,609 sheep, and 10,006 swine. Agricultural products included 2,116 bushels of wheat, 21,432 bushels of rye and oats, 297,614 bushels of corn, 72,318 bushels of Irish potatoes, 26,470 bushels of peas and beans, 40,225 pounds of butter, 24 hogsheads of cane, 11,640 gallons of molasses, 1,892,462 pounds of rice, 1,883 bales of ginned cotton, and 8,865 pounds of wool. The 1850 census reported that slaughtered animals were valued at $28,557. These figures, however, are misleading, since they lump together the large, wealthy rice plantations (which gave "Riceboro" in southern Liberty County its name) with the smaller, subsistence farms which bounded Taylors Creek and its drainages. For example, deeper in the "Pine Barrens," Tattnall County had a population of 2,378 whites and only 831 black slaves. The county's 327 farms included only 14,244 acres of improved land, for an average of 43.6 acres per tract. These farms produced only 47,800 pounds of rice and 321 bales of cotton (DeBow 1854:210-217).

Turning to the Liberty County's industrial development, the county contained only $4,950 of invested capital and only 24 hands were employed. The annual product was estimated at slightly over $7,000. Although unknown, it is assumed that a portion of this invested capital was in the form of copper stills, acquired from the Scotch liquor industry, for the distillation of turpentine. Employment figures would not be reflected in these figures, for by the 1840s and 1850s it became common for slave labor to be used in the cutting of trees and the collection of gum (Thomas 1975:3-4).

The Civil War

The advent of the Civil War and its after effects would haunt the state of Georgia for years. Seceding from the Union on January 19, 1861, Georgia followed South Carolina, Mississippi, Florida, and Alabama into the folds of the confederacy. Georgia, especially, had taken the hard road and "soon found itself in a war from which it would not recover for decades" (DePratter and Howard 1980:46). Georgia's Alexander Stephens became Vice President of the new Confederacy and Robert Toombs was made Secretary of State.

The war began easily for Georgia. In January 1861 a band of Georgia volunteers sailed down the Savannah River to capture Fort Pulaski. At the same time Atlanta began to increase in importance. In the 1850s the town was described as a "sorry-looking place, always associated in my mind with rain and super abundance of red-clay mud" (quoted in Lane 1993b:x). The population increased from about 2,500 in 1847 to over 11,000 in 1860 to more than 16,000 before the war's end. The Confederates also easily seized the Union arsenal at Augusta and the mint at Dahlonega (DePratter and Howard 1980:46). Additional arsenals were established in Atlanta, Savannah, Macon, August, and Columbus. The state penitentiary at Milledgeville was converted into a rifle factory and the Athens Foundry became a cannon factory.

These gains were quickly offset by the Union blockade along the coast in late 1861 and the fall of Georgia's coastal island fortifications in March of 1862. Fort Pulaski on Cockspur Island was retaken by Federal troops in April of that year (for a review of the historical documents associated with this event, see Anderson 1995). The loss of Fort Pulaski effectively closed the port of Savannah to all those but the hardiest blockade runner. Cut off from the sea, new batteries were thrown up around the cities and paving stones were ripped up from the streets to serve as ballast to sink obstructions in the river.

Other coastal engagements included minor battles at Whitemarsh Island in April of 1862 and Fort McAllister in March of 1863 (Lane 1993b:xi). Additional Union incursions occurred in June 1863 when the bridge over the Turtle River near Brunswick was destroyed and in July when the coastal town of Darien was burned.

Except for Fort McAllister on the Ogeechee River, all of coastal Georgia was under Federal control. It wasn't, however, until early 1864 when Confederate troops began to build obstructions *above* Savannah that the city's citizens began to realize both that they were being abandoned and also that the war was lost.

In May 1864 the interior of Georgia felt the full brunt of the war (Lane 1993b:xi). That Spring, General Sherman left Chattanooga and began his long fight to the sea with an army of 100,000 Union troops (Figure 14). Following the route of Western and Atlantic Railroad, Sherman faced Confederate forces of about 41,000 troops commanded by General Joseph E. Johnston and later by General John B. Hood. While initially stymied, Sherman managed to outflank the Confederate positions, forcing them into Atlanta's trenches. After forty days of bombardment, part of the Union forces swung south of the city, threatening Confederate supply lines to Macon. At that point, on September 1, Hood evacuated Atlanta. From May to September, 4,988 Union soldiers and 3,044 Confederates were killed in Georgia. Those hospitalized from malaria, typhoid fever, diarrhea, dysentery, measles, and other diseases accounted for an additional 46,000 Confederate troops and nearly 63,000 Union soldiers.

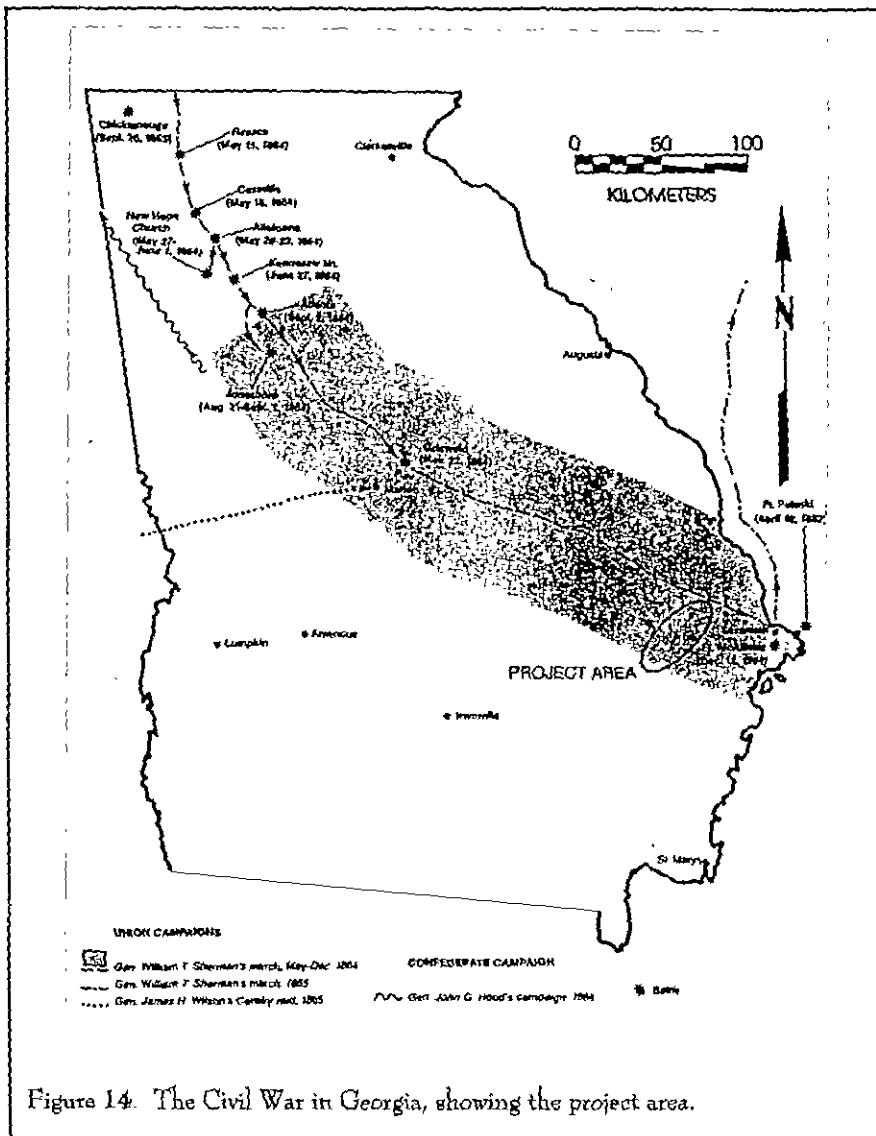

Figure 14. The Civil War in Georgia, showing the project area.

After taking Atlanta in September 1864, Sherman's route to Savannah lay open. He wrote his wife, "We have devoured the land. All the people retire before us and desolation is behind. To realize what war is one should follow our tracks" (Lane 1993b:xiv). By November 16th, Sherman was done with Atlanta and had to decide whether he would retreat to Tennessee or continue his march to Savannah. By taking Savannah, Sherman would be able to create a new base on the Atlantic coast which would decrease the length of his supply line (Nevins 1971:158). This would assist him in his move north to harass Lee's rear lines south of Petersburg. It was also Sherman's intent to live off the land and by doing so, destroy as much food, munitions, and infrastructure as he could, thus eliminating

the threat posed by Johnson and Hood's wide ranging armies.

Sherman left Atlanta with 60,000 infantry and 5,500 cavalry. He would lose less than 850 men during his operations within central Georgia and the capture of Savannah (Nevins 1971:158). His troops covered an area approximately 96 km wide and 400 km long throughout the Georgia countryside (Nevins 1971:158). "Sherman's line of march followed the Georgia Central Railroad, covering a wide belt on either side, and east, of Louisville . . . between the Ogeechee and Savannah Rivers" (Guernsey and Alden 1977:686 [1866]). Sherman's right wing:

> commanded by Major-General Oliver Howard, moved through Jonesboro, Monticello, Gordon, [and] Irwinton. The left wing under Major-General H.W. Slocum headed to Covington, Madison, Eatonton, [and] Milledgeville. Brigadier-General Judson Kilpatrick led a cavalry which struck toward Macon, fell back to Gordon and rejoined Sherman at Milledgeville (Lane 1993b:xvii).

By November 22 Sherman's army had captured the state capital in Milledgeville and had crossed the Ogeechee by the end of November (Figure 15). One account, of Mary Jones of Liberty County, expressed the anguish of local residents:

> Clouds and darkness are around us. The hand of the Almighty is laid in sore judgement upon us. We are a desolated & smitten people (Lane 1993b:220).

Sherman faced little resistance and finally captured Savannah from the west on December 21, one day after the city was abandoned by the Confederacy.

Campbell et al. (1996:117) note that Union troops visited Fort Argyle, the nearby area of Dillon's Ferry, and the Canoochee River Bridge below Eden and Taylors Creek. They observe, however, that there is no mention of the Taylors Creek community. At nearby Bryan Courthouse (Eden), the Union military erected earthworks, while other regiments spread out to defend their new territory (Campbell et al. 1996:118).

The damage done by Sherman's armies (as well as retreating Confederate forces) to Georgia's agriculture and industrial infrastructure in thirty-four short days would take decades to overcome. Sherman estimated the damage to the state during his campaign as "fully $100,000,000.00 one fifth of which had been of use to [the] army, and the rest shear waste and destruction" (Guernsey and Alden 1977:690-691 [1866]; Nevins 1970;159). Between Howard's right wing and Slocum's left wing, the Union army, during the campaign from Atlanta to Savannah, set free over 3,000 African American slaves, confiscated over 26,500 head of cattle, 6,171 horses and mules, 10.5 million pounds of grain and corn, 10.5 million pounds of fodder, over 43,000 bales of cotton, and destroyed over 310 miles of railroad to where "scarcely a tie or rail, a bridge or culvert," remained in central Georgia (Guernsey and Alden 1977:692 [1866]; Nevins 1971:159). Various strategic support industries were also destroyed. These included "machine shops, turn-tables, depots, water-tanks, cotton gins and presses" (Guernsey and Alden 1977:692 [1866]). Brigadier-General Kilpatrick's operations would add 14,000 bales of cotton, 12,900 bushels of corn and 160,000 pounds of fodder to Howard's and Slocum's totals.

By April of 1865 the war would be over but, because of the war's destruction, life, as it had been known to the residents of central and coastal Georgia, ended in December 1864. Campbell and her colleagues provide an overview of the impact the Civil War had on the local residents. Here, like in many other small Southern communities, Sherman and his troops tend to be vilified (Campbell et al. 1996:118).

Sherman's march through Georgia, however, had other affects on history. As Sherman marched through Georgia, many slaves deserted their plantations and sought refuge with the Union forces. In what may have been a wise military decision, Sherman made a very poor political judgement, turning most of these freedmen away. Large numbers were re-enslaved by the remnants of the Confederate Army — creating a major political scandal for President Lincoln (Friedheim and

Jackson 1996:132).

Lincoln dispatched Secretary of War Edwin Stanton to Georgia to investigate the situation. After meetings with a number of African-American ministers in Savannah, Sherman issued his famous Field Order Number 15, which set aside almost a half-million acres of captured Confederate land, dividing it into small plots for freed slaves. Although this approach satisfied the needs of the immediate political situation, as Willie Lee Rose discusses at length, the North would eventually turn their back on Southern blacks and relatively little of this acreage would actually be distributed (Rose 1964:328ff).

The combined force of Sherman, coupled with the increasing number of freed blacks and the use of black troops by the North, resulted in the call by Jefferson Davis, president of the Confederacy, for the recruitment of slaves into the Confederate Army, offering them both pay and freedom. This proposal was passed by the Confederate Congress in early 1865. As Friedheim and Jackson note, "the fact that the South was freeing African Americans in order to save the Confederacy was one last bit of dramatic evidence that its war to preserve slavery was all but lost" (Friedheim and Jackson 1996:133).

Reconstruction

The postbellum period within Georgia was difficult for the state and its residents. Economic recovery from a devastated industrial and agronomic base, as well as inter-related transportation systems, would affect Georgia's recovery until the 1890s. The problem was compounded by nationwide depressions that lasted from 1873 to 1878 (DePratter and Howard 1980:46).

While Sherman left Georgia in January 1865, it was June of that year before Federal authority was extended from Macon and Savannah throughout the rest of the state. In May 1865 President Andrew Johnson proclaimed James Johnson, a lawyer from Columbus, the provisional governor of Georgia. A convention of loyal Georgians repealed the secession ordinance, abolished slavery, and repudiated the Confederate debt in October 1865. A new governor, Charles Jenkins, was elected and the new legislature ratified the Thirteenth Amendment and passed additional laws to guarantee the liberty of the freedmen.

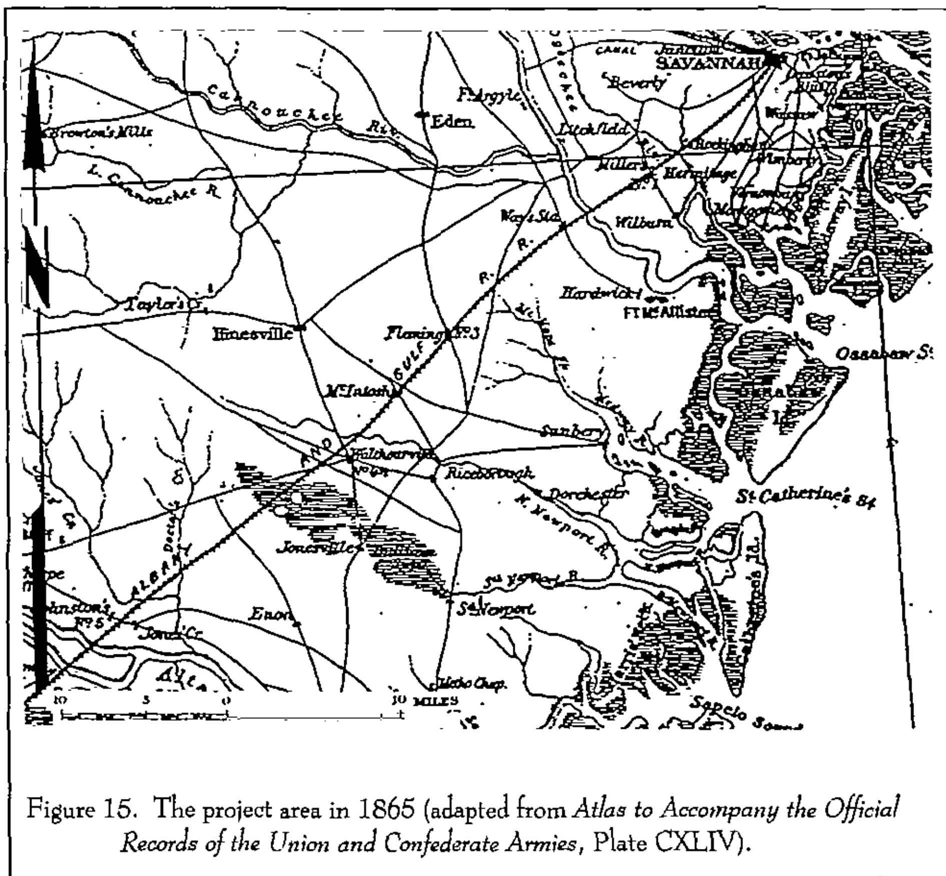

Figure 15. The project area in 1865 (adapted from *Atlas to Accompany the Official Records of the Union and Confederate Armies*, Plate CXLIV).

Congress, however, reacted angrily to Southern excesses and passed a military reconstruction act in March 1867. Georgia's new government was abolished and the state returned to military rule. State government was again reorganized, only this time there were even more blacks and fewer whites in the legislature.

In April 1868 Rufus Bullock was elected governor and in July a new legislature ratified the Fourteenth Amendment. The state capital was moved from Milledgeville to Atlanta. But by December 1869 Congress once again became outraged by the excesses of the Ku Klux Klan and re-established military rule, again "re-organizing" the state government. Under this third government, the Fifteenth Amendment was ratified and Georgia was finally readmitted to the United States in July 1870.

Economic and Political Reorganization

While the political future of Georgia was in upheaval, an effort was made to restore some degree of the state's agricultural prosperity. Freedmen often returned to the plantations to work under white bosses rather than white owners, and were still tied to a task system. Owning no land, freedmen and landless whites formed the nucleus of a relatively new labor system of tenancy. This new labor system grew dramatically, rising from about 53% in 1890 to over 65% in 1910 and peaking at about 68% in 1930 (Coleman 1991:259). The number of farm units increased from 224,00 in 1900 to 310, 132 in 1920, with the average size of the farm unit dropping from 117 acres to only 82 acres.

While there were a variety of systems, tenants usually paid either a cash rental or became sharecroppers who divided their crop with the landlord in return for the ability to work a portion of the plantation. Interestingly, not only did the proportion of black farmers in the flat pine lands decrease substantially between 1899 and 1910 so did the rate of tenancy. Although the rate of tenancy was double that for blacks than whites (24% as compared to 41.9%), statistically the flat pine lands held the lowest number of white tenant farmers and other than the flat pine lands, only the lower coastal plain contained fewer black tenants than any other portion of the state (Harper 1922:329, 332, 358).

Cotton continued to be the major focus of agricultural efforts — offering white land owners with their only hope for economic revival. Just as "King Cotton" drove the South to the Civil War, it served to nearly ruin any chance the South had to revitalize itself after the war. Although over half of the total value of Georgia's agricultural production was wrapped up in this one product, in the pine lands only corn production (by 30%) exceeded the values of cotton (Harper 1922:341).[3] The overall dependence on cotton was the result of a number of different factors. Kenneth Coleman, for example, notes that force of habit keep many farmers growing cotton — they simply didn't know any other crop. Many, he observes, didn't have either the education or financial resources to diversify (Coleman 1991:257). Of equal importance was that with small, and concentrated urban populations, markets for fresh produce were limited. This, coupled with the very poor transportation network crippled efforts to engage in truck farming until the Second World War. Even as late as 1930 only 6% of Georgia's farmers lived near paved roads.

The reliance on cotton, combined with the debilitating effects of the Civil War, created an intricate web of dependency between tenants, land owners, and merchants. After the Civil War the crop lien system emerged as the only viable source of short-term credit. By the 1890s the system had expanded to the point to trapping between 80 and 90% of Georgia's farmers. In order to obtain credit for planting, or sometimes for even living, a farmer obtained a lien on his ungrown crop from the furnishing merchant. These merchants, themselves living on very little hard cash, undertook to finance what were often risky farming efforts. Consequently they typically charged from 25% to as much as 75% interest on their loans under the crop lien system.

In the project area Campbell et al (1996:119)

[3]As stated by Harper (1922) it should be noted that "acreage and yield fluctuate from year to year, and the census year may have been abnormal in one way or another, so that figures should not be taken too literally" (Harper 1922:341).

observe that agricultural production was low, livestock herds were small (probably still suffering from the Civil War at least a decade and a half latter), and the farms were typically small. The agricultural censuses for the Fort Stewart area, revealing increased numbers of small farms, parallel those for much of adjacent South Carolina. Campbell and her colleagues suggest the census records are documenting the small land holdings of freedmen — which is very likely.

The Liberty County Grange association toured the Taylors Creek area in 1876, documenting the small farms typical of the area (Campbell et al. 1996:120). Of the 17 examined farms, 14 were "one horse farms." At these 14, 12 used only family labor and only two also used some day labor. At the three "two-horse farms," one used only family labor, while the other two kept a hired hand. They reported largely subsistence crops of corn, rice, sugar cane, sweet potatoes, peas, and oats. Cotton was likely a relatively rare crop.

From the standpoint of corruption, Republican rule during Reconstruction was likely no better, or worse, than Democratic rule either before or afterwards. In Georgia, for example, a white Reconstruction official pushed the state's newly formed public school system to purchase books published by the New York Harper Brothers firm, in exchange for a $30,000 "loan" (Friedheim and Jackson 1996:234). While the same types of fraud were seen, regardless of political affiliation, even the hint of corruption played into the hands of those opposing Reconstruction.

Although the freedmen did exercise their voting rights in 1867 and 1868, they never dominated the Georgia political scene during Reconstruction. Threats of violence by the Ku Klux Klan eliminated any real black influence and by December 1870 the Democrats won overwhelming control of the state legislature. By 1873 this white legislature effectively eliminated virtually all of the advances made by the black electorate by extending residency requirements for state and county elections.

The 1870s and 1880s were a period of economic revitalization, energy, and optimism, for rural Georgia. Although the overall economic situation changed little, if at all, major changes did occur in the manufacture of naval stores, particularly in the turpentine industry. Since the late Colonial Period North Carolina had led the nation in the production of naval stores. This was particularly true of the turpentine industry. Yet, by the late nineteenth century a history of poor planning had led to a decline in production within that state (Thomas 1975:4).

> After 1875, it was to Georgia that many North Carolina turpentine farmers moved to "set up shop" in Georgia's great pine belt, south of the fall line. Most of these North Carolina farmers brought black workers with them and returned each year to obtain more workers from the Carolinas. The farmers built villages or quarters for them on the sites since they had no other place to live (Thomas 1975:4-5).

From 1880 to 1905 Georgia led in the production of naval stores. Florida took the lead until 1923 when Georgia regained its position in the naval stores industry (cf. Butler 1998). Yet, it should be noted that while many of the state boasters forecasted a "New South" of reconciliation and reform, much of the state remained locked in poverty and bigotry nurtured by years of slavery. In 1882, Oscar Wilde wrote from Augusta:

> I write to you from the beautiful, passionate, ruined South, the land of magnolias and music, roses and romance, picturesque, too, in her failure to keep pace with your keen Northern pushing intellect, living chiefly on credit and on the memory of crushing defeats (quoted in Lane 1993a:xii-xiii).

In spite of the improvements seen in the urban areas, Georgia remained rural and poor. In 1900, 85% of the state's population still lived on farms or in small villages and 60% continued to work in agriculture. Further, the state's per capita income showed no increase between 1880 and 1900 (Lane 1993a:xiii).

Cotton production on late nineteenth century

tenant farms was little different from that practiced on antebellum plantations. The planting, cultivation, and picking was labor intensive, with the entire family, and often a mule, devoting their entire energies to this single minded pursuit. Yields were low and debt continued to be heavy.

Lane (1993a:xiv) points out that debts which could be repaid by a single bale of cotton in 1880 required two bales only five years later in 1885. A major financial panic hit the country in 1893, followed by a nearly seven year depression. Cotton prices plunged to less than 5¢ a pound and it wasn't until 1898 that the recovery drove prices up to 7½¢ a pound. These hard times forced furnishing merchants to severely restrict lending, even based on crop liens. This caused some crop diversification, but little lasting improvement.

Cotton prices did not increase significantly until the early twentieth century, when there was a twenty year period of relative prosperity. Farmers turned their backs on diversification and returned to "King Cotton." The 3.5 million acres planted in cotton in 1900 were increased to over 5 million acres in 1916. It was also at this time that the turpentine industry gained new impetus for its production, brought about by Dr. Charles Holmes Herty:

> Herty, a chemist at the University of Georgia, was on a sabbatical to Europe when he heard a German professor relate how the Americans "butchered the pine trees by cutting a box into the tree to collect the resin and sometimes ruined the future growth of the tree. Herty was also able to see cups, a new invention, being used to collect gum at this time. Herty returned to Georgia late in the summer of 1900 and started his crusade to better the turpentine industry with an initial visit to Valdosta in October of that year (Thomas 1975:5).

Eventually, he invented the clay, or Herty, cup to "replace the box method of collecting gum" (Thomas 1975:6). It was only after the introduction of the "Herty cup" that Georgia was able to retain the lead in turpentine production.

Many of the resulting "turpentine towns" are only vaguely remembered by locals and poorly documented in the historic records. A typical twentieth century turpentine still is shown in Figure 16. Campbell et al. (1996:134-135) provide an interesting sketch of Strumbay, in the Willie area, just west of Rimes Cemetery in the location of what is today Training Area B-11, northeast of the current project area. Little is known about this small town, although historic research indicates that Harmony Methodist Church served the white residents of the area beginning around 1888 (Campbell et. al 1996:135). Postal service began around the same time in Strumbay, and continued until at least 1906 (Campbell et. al 1996:135). Before 1910, William Tuten built a depot at Strumbay during the extension of his tram railroad from Letford to Strumbay, which he later extended even further (Campbell et. al 1996:135). Perhaps more interesting is the nearby African-American community of Stewart Town. Although even less information is available about this community, its existence documents the segregation of services, communities, and even life which characterized the South in the late nineteenth and early twentieth centuries.

Immediately before the First World War, Georgians in general had greater prosperity than they had seen since before the Civil War. The expansion of Rural Free Delivery and the increase in automobiles and telephones contributed to this appearance of prosperity and well-being (Coleman 1991:261). Also contributing was the development of inexpensive fertilizer which began to make the sandy soils of the pine barren woods more profitable. Campbell and her colleagues note that land was cheap and by 1910 cotton was a much more commonly planted crop, at least in the Liberty County area. They note that only did the small owners take advantage of fertilizer to increase their production, but the "owners of large holding who had exhausted the timber and turpentine potential of their tracts turned to farming, utilizing tenant labor" (Campbell et al. 1996:127).

The introduction of the boll weevil between 1915 and 1917 (Hodler and Schretter 1986:86),

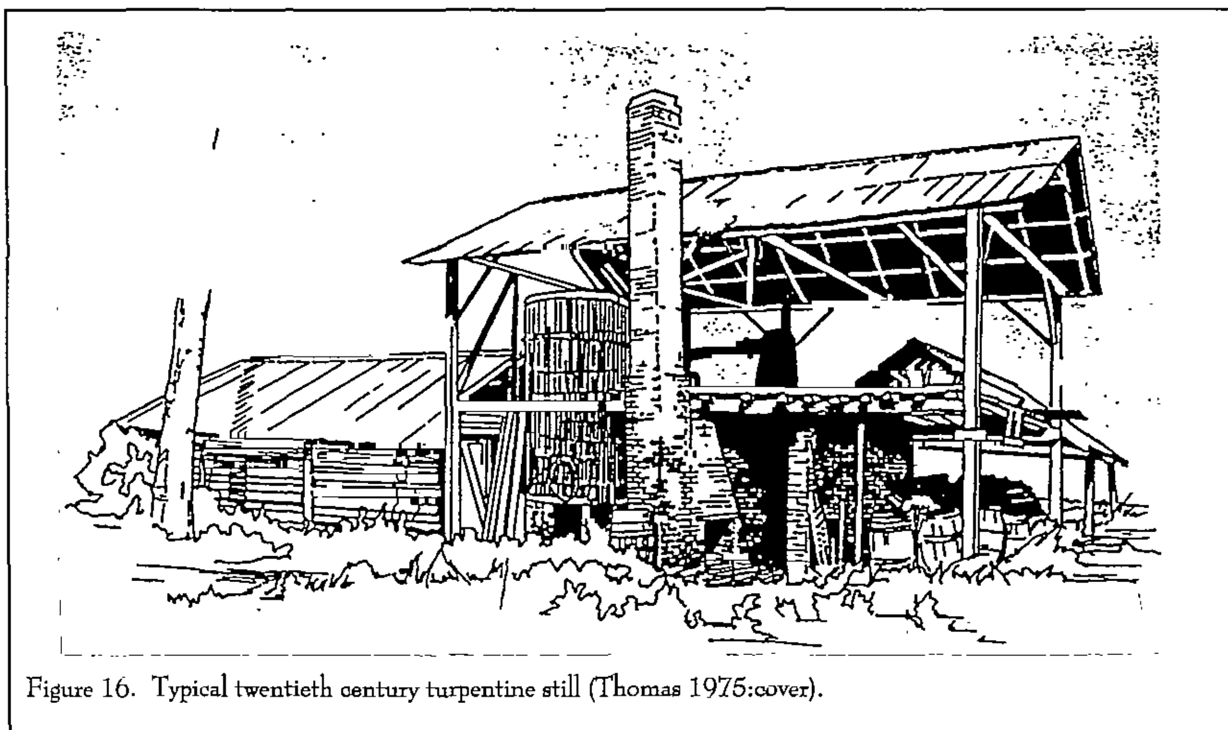

Figure 16. Typical twentieth century turpentine still (Thomas 1975:cover).

coupled with increasing competition further north and even outside the United States, sent prices plummeting. Cotton prices dropped from 35¢ a pound to 17¢ in a single season. Cotton yields fell by a third to nearly a half (Coleman 1991:263).

In spite of the spread of tenancy, Bryan, Liberty, and Long counties continued to have low tenancy rates. For example, in 1930, at the height of tenancy, these counties all had less than 35% tenancy, while counties just slightly further inland had ranges up to 80% (Hodler and Schretter 1986:86). The project area continued to be dominated by small, privately owned farms (this is also noted by Campbell et al. 1996:139).

What industrial improvement the state saw focused on very basic extractive industries — cotton, lumber, and paper mills — which plundered the natural environment and paid very low wages. One enterprise in particular — cotton mills — was Georgia's leading industry throughout the half-century from 1890 to 1940. In Liberty County, by 1900, agriculture, livestock, lumber, and naval stores were the primary industries. In this year the county produced about 333 bales of cotton, 2,000 head of cattle and hogs, 2,000 feet of lumber, and approximately 1,000 barrels of rosin and turpentine (Groover 1987:70).

In western Liberty County large tracts of property were purchased by turpentine distillery companies. The Lanier Turpentine Corporation owned a number of tracts in the project area. As well, a number of privately owned stills were constructed through out the area. A large still was owned and operated by Mr. Porter of Taylors Creek (Trinkley et al. 1996) as was one owned and operated by Joseph B. Way in Hinesville (Groover 1987:81). Another is reported from the Willie area (Jennifer Glover, personal communication 2000). As of 1901 Liberty County contained a total of 12 distilleries (Thomas 1975:E-1).

Trade unions were virtually unheard of prior to about 1890. During the first half of the twentieth century most union activity focused on skilled trades. Textile workers used strikes on several occasions in an effort to organize. The most notable occurred across the state during the summer of 1934. Eventually the state militia was called in to break the strike and union organization in the mills would not be successful for another two decades.

The railroads, one of the few truly successful industries in Georgia, had expanded dramatically by 1899. Much of this expansion was in central and northern Georgia. The main line connected Savannah with McIntosh, Walthour, Johnson, and Jesup on the southern edge of the project area, where lines then extended north, south, and west (Hodler and Schretter 1986:171). The bulk of the Pine Barrens wouldn't be readily accessible until at least 1939 (Hodler and Schretter 1986:172). In Liberty County several railroads were constructed to access various portions of the county. The majority of these were "convenient to farmers, naval stores operators, and sawmills except in the upper part of the county" (Groover 1987:80). These would include the Darien and Western Railroad to the south and the Glennville and Register Railroad to the west. The Georgia, Coast and Piedmont was established in 1902. A fourth railroad, the Flemington, Hinesville and Western ceased operation in 1919 (Groover 1987:70, 80). By 1919 there were six freight stations located in the county.

Campbell et al. (1996:127) briefly discusses those railroads, spur lines, and trams which were actually located on Fort Stewart, such as the "Dunlevie Railroad" still shown on military maps as "dismantled railroad." The previously mentioned Flemington, Hinesville and Western also passed through Fort Stewart lands on its route from Hinesville to McIntosh, although Campbell and her colleagues comment that this line "had no real impact on the study area" (Campbell et al. 1996:127). Another was the Savanna and Southern Railroad, also known as the Tuten Railroad (Jennifer Glover, personal communication 2000).

Much like the orientation of small towns and communities along river and road locations during the eighteenth and nineteenth centuries (Trinkley et al. 1996), a number of small communities grew up along the railroads. Although some of these communities still exist, for example Johnstons Station became Ludowici, a number failed to remain viable through the twentieth century. Many of these Liberty County communities had names like Mendes, Wee Fanny, Goosepond, Donald, and Shady Grove (Groover 1987:70). Many contained schools for the education of both blacks and whites. In 1919 the county contained 98 public elementary schools and a one public high school. A number of privately operated schools supplemented the public system (Groover 1987:83). One of these communities, Willie, is located north of the current project area. Part of this town was relocated during the 1998 Chicora surveys (Campo et. al 1999a:61, 151-156). It has recently been tested by TRC Garrow and Associates (Epenshade et. al 1999:106-119, 150), and has been recommended as eligible for inclusion on the National Register of Historic Places. Willie was also centered around the railroad depot that opened in 1911. The town eventually grew to include grocery stores, a cotton gin, a sawmill, a turpentine still, a church and a school (Campbell et al. 1996:136).

The Rise of Populism and Segregation

The Democratic Party, popular with Atlanta businessmen, dominated Georgia's recovery. Farmers, unhappy with the shift toward "big business" and the urban economy, were easily defeated by Democratic appeals for unity against the threat of black domination, at least during the 1880s. By the 1890s, however, the power of the rural communities was increasing. In 1890 the Farmers Alliance unseated conservative Democrats in six of the 10 Congressional Districts, took control of the party, and easily won both the governorship and the legislature (Lane 1993a:xv).

Faint with power, these populists bolted from the Democratic party and began an appeal to the common interests of all farmers — black and white alike. Urging economic reform and appealing to the discontent of both poor blacks and whites, the leader of this movement, Tom Watson, drove the conservative Democrats to outlandish displays of election fraud. Blacks (and whites) were provided free liquor and barbecue, then driven to polling places. Using the tactic of voting early and voting often, the Democrats won landslide victories against the populists — garnering more votes in some precincts then there were registered voters.

The Democratic response to Tom Watson was borne of fear. Black illiteracy had dropped from 92.1% in 1870 to 52.4% in 1900. By the early 1900s blacks owned 1,400,000 acres of property valued at over $28,000,000. Simply put, in a single generation freed slaves had managed to increase their land holdings by a million acres and reduce their rate of illiteracy by half. The white population, still yearning for a world of

"darkies" who knew their place, viewed this kind of progress with alarm. Lane recounts one Georgian who put the view of the white population very plainly:

> As long as a Negro keeps his place I like him well enough. As a race, they are vastly inferior to whites and deserve pity. This pity I am willing to extend as long as they remain Negroes, but the moment a nigger tries to become a white man, I hate him like hell (quoted in Lane 1993a:xvii).

As the agrarian empire of Georgia began to collapse, and white and black people began to move into the cities, crossing traditional and accepted lines of behavior, segregation sprang up almost overnight. Georgia's first statewide segregation law was passed in 1891, with additional laws enacted in 1897, 1905, and 1908. Cities also began to pass municipal ordinances against blacks (for an overview, see Kennedy 1990).

As the economic conditions of the state worsened there was a dramatic outbreak of lynchings, which Lane suggests reflected the "poverty and frustrations" brought on by the collapse of cotton and the failure of populist reforms (Lane 1993a:xix). Between 1889 and 1918 Georgians lynched at least 386 people — more than any other state — and 93% were blacks.

The white populists, believing that it would be necessary to shackle blacks in order to achieve their own economic freedom, engaged in one of the dirtiest campaigns ever seen in Georgia. In the aftermath of vitriolic oratory, Atlanta exploded in a four-day race riot. The new governor of Georgia, Hoke Smith, pushed through a constitutional amendment to disenfranchise the black in 1908, making Georgia the seventh Southern state to do so. As Lane observes, "a half century after emancipation, Georgians had put the black back 'in his place'" (Lane 1993a:xx; see also Ayres 1995 and Du Bois 1992).

At first slowly, and then in very large numbers before and after the First World War, blacks engaged in the "Great Migration," moving out of the South. There was a shift from south to north, rural to urban, and from agricultural to industrial.

World War I stimulated some diversification of crops, but had few other economic impacts. It certainly did not solve any of Georgia's economic or social ills. Following the war, a series of economic crises struck. Cotton prices continued to fall, the boll weevil continued to advance, and cotton was taken out of production. The state's farm population declined by 375,000. Finally, as if to seal the fate of Georgia, the Great Depression hit in 1929.

The Depression and the Modern Era

The New Deal agricultural policies of the 1930s to some degree helped large farms, but small farmers and especially tenants continued to suffer. Farms were abandoned as the migration to the cities continued.

One of more successful programs for Georgians was the establishment of the Federal Land Bank system, which served to undermine the crop lien system by providing affordable credit (Coleman 1991:265). Another major change in the lives of the ordinary Georgia farmer was the creation of the Rural Electrification Administration in 1937. Prior to this 97% of the state's farmers lacked electrical service. By 1950 forty-three cooperatives had been created and most of the farms in Georgia were electrified.

While causing much hardship on tenants and sharecroppers, the Depression and the associated government programs also served to break "King Cotton's" monopoly. Tobacco, which was already the state's second most important crop by 1927, doubled in acreage by 1939. The 1930s also saw Georgia assume the lead in national peanut production. Pecan production increased and there was also a steady increase in the commercial production of tomatoes, beans, cabbage, cantaloupes, and other truck crops.

It was World War II, as much as any New Deal program, which dragged America, and Georgia, out of the Depression. Military bases pumped federal dollars into the state and war production expenditures encouraged even further economic development

(Coleman 1991:339). Per capita income would jump from about $350 in 1940 to more than $1,000 in 1950. Most of this growth was directly attributable to the rapid growth of industry and manufacturing.

Campbell and her colleagues have identified one appraisal report for a farm in the Fort Stewart area (Clyde vicinity, northeast of the project area) which they suggest may be typical. On the eve of World War II, the farmer:

> cultivated about one-third of his 94-acre tract; the rest remained forested. His homestead included a small wood-frame dwelling, a garage, smoke house, syrup shed, corn crib, barn with attached shed, a hen house, and another shed with stalls attached. The crib and hen house were built of logs; the other buildings all were of frame construction. Around the yard stood a picket fence. Water came from an open well. Twenty seedling peach trees, several well-grown pecan trees and a grape arbor stood on the premises. Pine trees suitable for pulpwood and saw timber, as well as pine and cypress for poles grew on the property, as did pines usable for naval stores production. In summation, the appraiser judged this to a "a fair farm unit with the forest portion of the tract in good condition" (Campbell et al. 1996:143).

Several small communities, at least one (Taylors Creek) dating to the antebellum, continued to be the focal points for the project area, each representing small, somewhat diffusely clustered combinations of commercial and residential structures held together by their cross-road locations. In spite of this, it appears that even these surviving towns had their economic bases eroded by the boll weevil and the exhaustion of the timberlands used for naval store operations.

Campbell and her colleagues attempt to categorize various sites as representative of different historic periods, but with only limited success. They note that, "other than the churches and cemeteries mentioned in the general discussions above, no specific sites associated with the 1865 to 1880 period have been identified" (Campbell et al. 1996:122). There are four sites with nineteenth century remains, which may (or may not) represent early postbellum occupations. In addition, they observe that there are an additional 150 sites which contain both nineteenth and twentieth century materials, as well as an additional 21 sites with only twentieth century remains. Most of these sites represent scatters of materials, some of which have been recognized as razed structures (Campbell et al. 1996:138). They point out, however, that archaeological testing of these historic sites is so sparse that there is little information with which to attempt any refinement of their temporal placement (Campbell et al. 1996:147). This problem, of course, is exacerbated by the relatively few ceramics providing good temporal markers for the late nineteenth and early twentieth centuries.

One town recently discussed by Panamerican Consultants (Little et al. 2000:70) was Bland Town, situated at the intersection of what are today F.S. Roads 36 and 37D. A small community grew up around the turpentine distillery operated by James Morgan Bland in the 1930s. Largely kin-based, it consisted of the farms and residences of Preston Bland, Prentice Bland, Basil Dasher, and J.M. Bland. In addition, the community consisted of tenant or worker housing for the African Americans collecting and processing the gum to produce turpentine, as well as various support structures, such as a saw mill and store.

Fort Stewart, created in June 1940 with the purchase of 2025 ha, was initially called Camp Stewart and was intended to serve primarily as a training facility for National Guard units being inducted into the regular army (Campbell et al. 1996:150-151). The acreage was quickly expanded, so by 1941 the base incorporated 60,750 ha.

The area, selected for both its strategic importance protecting Savannah as well as its inexpensive land values, was thought initially to have a relatively low density of families. Early government

projections suggested that only a few hundred families would be affected. By the time the base was firmly entrenched, it appears to have displaced upwards of 6,000 people and 1,500 families (Campbell et al. 1996:151).

During the early years of World War II the base was used primarily for antiaircraft training. The 214th Coast Artillery Regiment and the 70th Coast Artillery Antiaircraft Regiment were brought to Camp Stewart in late 1940, and actual training for the antiaircraft program began in December 1940 (U.S. Army 1941:12-13). By 1942, 21 artillery and antiaircraft battalions were training at Camp Stewart, and the camp contained the largest antiaircraft training center in the world (Campbell et al. 1996:148-149). In 1944, the camp was used to train small numbers of antiaircraft batteries, although most of the personnel had shipped out by this time.

By late 1944, the post's function shifted to general troop training and by 1945 the focus was on training cooks and postal workers. In July 1946 Camp Stewart, as it was called, was deactivated. With only a skeleton force of military and civilian personnel stationed there, the base fell into disrepair and was used primarily as a National Guard summer camp (Campbell et al. 1996:153).

In 1953 the base's function shifted to include the training of tank units, although National Guard units continued to use the camp during the summer. Peaks in activity occurred during the 1961 Berlin Airlift and the 1962 Cuban missile crisis. During the Vietnam Conflict the base was used by the Aviation School Element and became a U.S. Army Flight Training Center.

After Vietnam the base came close to closing, but was eventually saved by the decision to organize an infantry brigade and division. Campbell et al. (1996) note that the First Brigade, 24th Infantry Division became the first unit of this reorganization to use the Fort Stewart facilities (Campbell et al. 1996:153). In 1980, the 24th Infantry Division was reassigned to the Rapid Deployment Force and became a mechanized division (Campbell et al. 1996:154). In 1990-1991, this division was involved in the Persian Gulf War. In 1996, the 24th Infantry was reflagged as the 3rd Infantry Division (Mechanized) (Epenshade et al. 1999:42). The post continues today to be used for military training.

RESEARCH STRATEGY AND METHODS

Research Goals

The primary goal of this survey was to identify, record, and assess archaeological sites within the survey tract, which included 322.5 ha on Fort Stewart. As stated earlier, this work is being done in order to fulfill compliance with the National Historic Preservation Act (Public Law 89-665, as amended by Public Law 96-515) Guidelines for Federal Agency Responsibilities, under Section 110 of the National Historic Preservation Act, Army Regulation AR 200-4, and 36CFR800 (Protection of Historic and Cultural Properties).

Preservation efforts offer important economic, tourism, and education opportunities (see, for example, Rypkema 1990). Yet, clearly these are of little consequence to a government agency whose mission statement is national defense. In such a case, the motivation is compliance with law. In spite of this, preservation offers intangible benefits, such as external benefits to society, which are worthy of careful consideration. U.S. Representative John Lewis from Georgia has remarked that, "it is not enough to learn from history or a movie, we must make sure that these precious pieces of our history are preserved." Knowing and understanding our past, many have argued, creates better citizens and hence a better society.[1] Citizens take greater pride in their city's, county's, and country's historical achievements. This pride naturally boosts morale and enhances civic participation. Native American and African American groups can rightly take pride in the expression of their unique ways of life, their history, and their contribution to our Nation. Exploration of our past reveals the heights of which humanity is capable. The study supplies continual inspiration and promise. The exploration of the past makes it possible to keep on seeing, thinking, and reflecting afresh — and this freshness and willingness to explore the past is essential to the democratic process. Exploration of the past may offer social commentary by providing new insights into past lives, or how society reacted to past pressures. It may even help us to better understand the failures of the past.

It is also important that a country which has so strongly advocated educational improvement and reform should also understand the irreplaceable role that historic and prehistoric resources can play in teaching us about our heritage. It is essential that the next generation of citizens understand the stories hidden within our archaeological sites and in our historic churches, houses, factories, and communities. The ability to reach out and touch the past, forming a strong and clear link between yesterday and today, offers an unforgettable understanding of another way of life and helps our children better understand the fabric of life in our country. By exploring and emphasizing African American and Native American history it is possible to strengthen the understanding that our heritage is the combined history and culture of all of our citizens.

Oftentimes historic preservation, through the exploration of the past, may challenge rather than reassure, and provoke rather than sooth. Archaeological research, in many ways, offers much more than history ever can, since history is largely written by the well educated, the wealthy, and the white. History tends to ignore the poor, the underclass, the illiterate, making them invisible people. History is what others want us to know, archaeology offers the opportunity to explore the reality of the past without the filter of subjectivity added by some, perhaps many, historical accounts. Archaeology offers the potential to explore the lives of African American slaves that are largely known only through the dry history of white slave-owner account

[1] One of the earliest discussions of preservation for patriotic reasons is Charles B. Hosmer, Jr.'s *Presence of the Past*, a history of preservation in America up to 1926. He reveals that long before even the Civil War, America's need to create a national identity manifested itself in efforts to preserve historic sites.

books and plantation diaries. While slave owners were concerned with how many acres a slave could hoe, or how much they had to be fed, the owner was rarely interested in how slaves lived, died, ate, or made their house a home. Likewise, our understanding of Native American groups in the historic period is dominated by traders and occasional visitors who had clear reasons for coloring their accounts. Archaeology offers the only opportunity for better understanding the reality of the past.

Part of this reality is also the understanding that history is not made up of single events, or great people, or unique ideas alone. As Tony Wrenn and Elizabeth Mulloy explained nearly two decades ago:

> Events are only punctuation marks; the process itself is history. It takes days and days of irritation and heat and insult, and grievance to provoke a revolution. A bicentennial commemorates 200 years — not just the years on either side of a hyphen (Wrenn and Mulloy 1976:15).

History is fluid and on-going. It involves both the great and the small. Archaeological studies help us better understand both the continuum and also the importance of the common person.

Many also point out that historic preservation is a "merit good" — simply because preservation is an important part of life, its perpetuation and dissemination merits government support. Like food, shelter, and education, some feel that everyone should be entitled to a minimum quantity and standard of historic preservation experience, whether that be exposure to historically significant buildings, a better understanding of past industrial technology, or the ability to explore Native Americans who lived thousands of years ago. The government allows preservation efforts to be available and emphasizes their importance by support of preservation on government facilities and land. Inherent in this is the assumption that, without subsidy, the cost of historic preservation is too high relative to most consumer's incomes. It follows that there is an intrinsic wrong in making our history available to only the richest 20% of the population, who are likely to represent a very biased cross-section of our society.

In addition to the legally mandated goals of this study, in an effort to expand the base of our socio-cultural knowledge, we have identified and attempted to incorporate a range of secondary goals. These reflect an effort to address at least some of the issues identified as important to the discipline.

Although many previous surveys at Fort Stewart have allowed us to address a broad range of secondary goals, including research and methodological issues, surveys of small tracts in generally low, unproductive area, permit rather limited research. As a result, our discussions here are limited to descriptive issues, such as site function, duration, and chronology, with only a brief consideration of site location.

No major analytical hypotheses were created prior to the field work and data analysis, although certain expectations regarding the secondary goals will be outlined in these discussions. The research design proposed for this study is, as discussed by Goodyear et al. (1979:2), fundamentally explorative and explicative.

As stated above, the primary goals of this survey were to identify, record, and assess the significance of archaeological sites within the survey tract. The latter aspect involves the sites' eligibility for inclusion on the National Register of Historic Places, although Chicora Foundation only provides an opinion of National Register eligibility and the final determination is made by the lead compliance agency, the United States Army, in consultation with the State Historic Preservation Officer at the Georgia State Historic Preservation Division.

The criteria for eligibility for the National Register of Historic Places is described by 36 CFR (*Code of Federal Regulations*) Part 60.4[2] and states that:

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[2] In addition to these criteria, properties with traditional religious and cultural importance to Native American or Native Hawaiian groups may be eligible for the National Register, even if they don't seem to fit any of the outlined categories.

> [t]he quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and
>
> a. that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> b. that are associated with the lives of persons significant in our past; or
>
> c. that embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> d. that have yielded, or may be likely to yield, information important in prehistory or history.

It is generally accepted that "the significance of an archaeological site is based on the potential of the site to contribute to the scientific or humanistic understanding of the past" (Bense et al. 1986:60). Butler suggests that the only valid measurement of significance must be based on what he calls the "theoretical and substantive knowledge of the discipline" at any particular moment in time (Butler 1987:821). While the use of this approach over that developed by Glassow[3] (1977) has been suggested, Butler himself acknowledges, "we cannot foresee future research questions, and we may not possess the theory to interpret and understand all that is present" (Butler 1987:822). At this point in time it seems essential to recognize the importance of asking the right questions at the right sites, not limiting the number of sites at which questions are asked, or what questions are posed. Clearly, asking "right questions" at the "right sites" can be difficult and requires an understanding of the "theoretical and substantive knowledge of the discipline" (Trinkley 1990:30-31).

National Register Bulletin 36 (Townsend et al. 1993) provides an evaluative process that contains five steps for forming a clearly defined explicit rationale for either the site's eligibility or lack of eligibility. Briefly, these steps are:

- identification of the site's data sets or categories of archaeological information such as ceramics, lithics, subsistence remains, architectural remains, or sub-surface features;
- identification of the historic context applicable to the site, providing a framework for the evaluative process;
- identification of the important research questions the site *might* be able to address, given the data sets and the context;

[3] Glassow's (1977) approach to evaluating site eligibility is through the use of five properties: site integrity, site clarity, artifactual variety, artifactual quantity, and site environmental context. These qualities stress properties of the archaeological record. *Integrity* refers to the degree of preservation or amount of in situ remains present at a site. It relates to the condition and amount of archaeological artifacts, ecofacts, and features found at a site. *Clarity* indicates how well the strata or subsurface features may be distinguished. *Variety* refers to the qualitative variability in the archaeological remains found at a particular site. *Quantity* refers to the frequency or density of the artifacts or subsurface remains and it is in many ways one of the easiest properties to evaluate (although it is certainly not the most important). The last criterion, *environmental context*, refers to unusual environmental features or zonation which might be important in distinguishing sites or site types.

- evaluation of the site's archaeological integrity to ensure that the data sets were sufficiently well preserved to address the research questions; and

- identification of "important" research questions among all of those which might be asked and answered at the site.

This approach, of course, has been developed for use documenting eligibility of sites being actually nominated to the National Register of Historic Places where the evaluative process must stand alone, with relatively little reference to other documentation and where typically only one site is being considered.

In the case of a survey which identifies multiple sites the process outlined by Townsend et al. (1993) can become burdensome. Consequently, this study has elected to combine some of the steps, making the process more streamlined, without substantively altering the goal to ensure that sites capable of providing significant information are provided the protection afforded in the historic preservation process. The development of a context was not undertaken for each site, but is found outlined in the prehistoric and historic overview section of this report.

The one exception to this process occurs when sites are situated in areas of unexploded ordnance. Fort Stewart has previously determined that sites located in such areas — where it is too dangerous for personnel to conduct subsurface testing or data recovery — will be considered ineligible. This was concurred with by the Georgia State Historic Preservation Division, which stated, "the information that makes the site eligible for the National Register under Criterion 'D' is inaccessible due to the presence of unexploded ordnance" (letter from Mr. Richard Cloues, Deputy State Historic Preservation Officer to Lt. Colonel Carey W. Brown dated June 22, 1998).

Archival Research

Site records provided by the Consulting Archaeologist at Fort Stewart were used in the background research rather than those at either the University of Georgia site files in Athens or Department of Natural Resources files in Atlanta.

A historic map study of the survey tract was conducted in the Chicora offices using maps provided by the Consulting Archaeologist. This study was initially begun as a method to determine if these relatively small farmstead sites were being identified in the field. If sites documented to have been present in the early twentieth century were not found by our field crews, we felt that this would indicate that the methodology being employed was not sufficiently robust to allow these types of sites to be recovered, assuming of course that there was no evidence of post-depositional modification.

Based on previous surveys (see for example, Campo et al. 1999a:161-171 and Campo et al. 1999b:97-101) we have found evidence tentatively suggesting that both methodology and also post-depositional activities have an affect on the identification of these sites. In general, it seems that these sites are often ephemeral and are difficult to recover, yet it seems that many have been obliterated from the landscape through military activities.

Our map study, therefore, begins with an evaluation of where these farmsteads *should* be located and this information is available in the field. However, our initial methodology is not dramatically altered. Transects are laid out as specified by the scope of work using the standard interval. Shovel tests or, in the case of the sniper range survey, pedestrian survey, are conducted as they normally would be. We do instruct field crews to be particularly attentive on lines where these structures should be present. In this way we are able to perform to the level expected by the scope of work, not unduly bias the recovery of information, and still be able to make some statement regarding the recovery rate of these site.

Field Methodology

As specified by the Georgia State Historic Preservation Division, an archaeological *site* is defined as a concentration of more than five artifacts in a 20 m area or any two consecutive positive shovel tests. An isolated *occurrence* consists of five or less artifacts. All

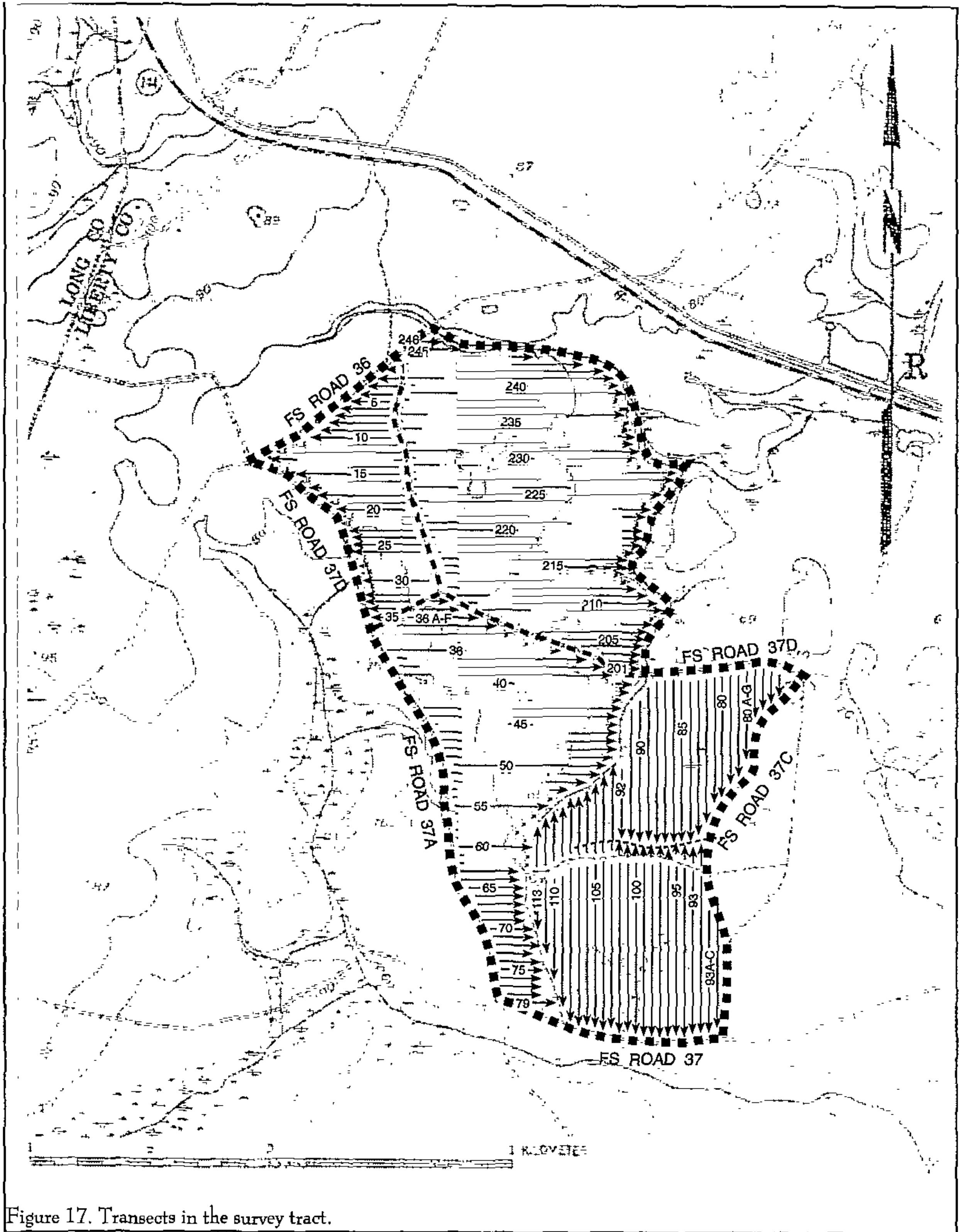

Figure 17. Transects in the survey tract.

archaeological sites and occurrences were assigned state site numbers.

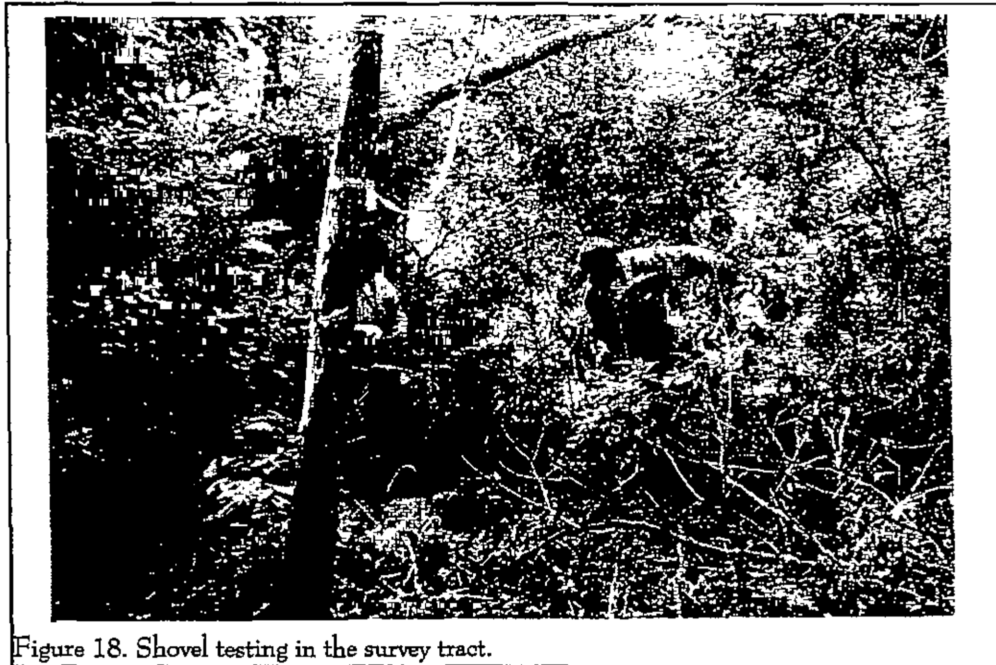

Figure 18. Shovel testing in the survey tract.

Subsurface testing, for the purpose of defining site boundaries, consisted of testing along cardinal directions at 15 m intervals on sites less than 50 m across and 20 m on larger sites.

The scope of work specified that high probability areas include transects and shovel tests spaced at 30 m intervals across the tract. Low probability areas consisted of transects spaced at 30 m intervals with shovel tests excavated every 50 m.

Shovel tests, which were typically 30 cm by 30 cm or greater, were excavated to subsoil (i.e., the B horizon by USDA definition) or the maximum depth achievable with a shovel (about 75 cm). Shovel test depths generally ranged from 30 to 55 cm, although some were more shallow due to the presence of water within the test. Fill was screened through 0.62 cm mesh hardware cloth and soil stratigraphy was recorded on positive shovel tests.

Positive shovel tests recorded during the survey of transects were further tested by positioning shovel tests in a cruciform in cardinal directions from the original positive shovel test. Shovel tests were excavated in this cruciform shape until two negative shovel tests in a row were encountered. When more than five artifacts were recovered in two consecutive shovel tests, the area was designated a site and a 50 cm by 50 cm test unit was opened. The test units were excavated to subsoil and soil profiles for these units were recorded using the Munsell Color Chart designation. Overall views of the sites and photographs of the test units were taken using black and white and color transparency film.

The presence of unexploded ordnance in the sniper tract made it necessary for us to undertake only a pedestrian survey of the project area. We performed no subsurface testing, as requested by Fort Stewart's Consulting Archaeologist. We examined the survey tract by walking 30 m transects, collecting artifacts, and noting the location along the transects. Ground visibility ranged from no visibility in forested areas with dense leaf litter, to 50% in areas of the Sniper Range. Survey transects were plotted and numbered on a project field map and transect logs were kept indicating the location and the soil conditions for each shovel test. Field notes for each positive shovel test and surface collection, in addition to site notes and maps were also recorded.

During the course of this project 35 transects with 373 shovel tests were placed in the high probability area. In the low probability survey area 94 transects were established and 1,103 shovel tests were examined. Combined, 1,475 shovel test locations were examined in the two areas. Of these 30 were not excavated, accounting for 2% of the total. Most of these (n=19, 63%) were not fully excavated because of standing water

or soils with water freely flowing into the hole during excavation. An additional 10 shovel tests were not excavated because of obstacles such as dense brush or heavy disturbances. One shovel test was not excavated because of an adjacent bee's nest. In the sniper range a series of 46 transects, each 30 m apart, were walked and visually inspected. Shovel test logs were not maintained for these areas, but numbers of negative surface collections in each tract were noted in daily field notes.

At each *site*, a sketch map was drawn to scale showing the locations of shovel tests, test units, natural and man-made features, and datums. In addition, GPS positions were taken at all *sites*.

The GPS positions were taken with a Garmin GPS 12XL Personal Navigator™ rover used with a Garmin GBR 21 Beacon Receiver™. At each site, *at least* 50 positions were recorded since averaging provides some improvement on accuracy. GPS accuracy is generally affected by a number of sources of error, including selective availability, errors with satellite clocks, and multipathing. Satellite clock errors can occur when the satellite's clock is a little as a millisecond off, or when the orbit is slightly askew, resulting in a distance error. Multipathing occurs when the signal received from the satellites bounces off trees, chain link fences, and bodies of water. The most extreme source of GPS error is selective availability (SA). This is the deliberate mistiming of satellite signals introduced by the Department of Defense. This degradation results in horizontal errors of up to 100 m 95% of the time and vertical errors of up to 173 m 95% of the time.

GPS readings taken with SA active[4] can be corrected by comparing them to data collected simultaneously at a known location or base station, known as differential correction (or DGPS). This was undertaken with the Garmin GBR 21 Beacon Receiver which processes differential correction and records the corrected GPS UTM coordinates on the Garmin Personal Navigator.

The critical parameters used by the Chicora rover attempted to maximize both data quality and quantity, using the Garmin recommended fault settings (for example, the PDOP mask, which is an indication of the accuracy of the GPS positions which are calculated, is set at 6, with PDOPs below 4 being excellent and above 8 being poor). Unlike several earlier surveys undertaken on post, we did not encounter any problems with data collection.

As discussed in the previous report (Campo et al. 1999:74), GPS coordinates used in previous surveys have been unsatisfactory partially due to the use of NAD (North American Datum) 83 setting at both the base station at Fort Stewart and the rover used by Chicora, while USGS topographic maps are still printed using NAD 27. Many of these previously gathered coordinates were also affected by multipathing, caused by the dense tree cover in the survey tracts during the summer. We seem to have met with greater success during this survey. As Table 5 shows, the GPS coordinates are extremely close to the hand plotted coordinates. The location of one site at the intersection of several major roads shown on the USGS maps ensures that the hand plotted location is correct, allowing us to accurately compare the two coordinates for at least that one site. The isolated find was situated in a heavily wooded area with no readily identifiable landmarks, except for a north-south running trail. In this case, it seems likely that the DGPS position is far more accurate.

Table 5.
UTM Coordinates (NAD 27)

	DGPS		Map Interpolation	
Site	N	E	N	E
9LI874	3532104	430701	3532140	430700
9LI875	3532257	430154	3532250	430150

The reason for this improved level of GPS accuracy is attributed to the use of an antennae with an 18-foot extension capability. We believe that this eliminated problems previously encountered with

[4] Recently the Department of Defense has turned off selective availability. Our work elsewhere is suggesting that 3D and DGPS are providing very similar results.

multipathing, providing a clear view for satellites.

No deviations from the original methodology described in the Scope of Work other than those mentioned before occurred during the field work. No other unusual or expected problems occurred during the study which affects the quality of the data.

Laboratory Methods

The cleaning of artifacts and cataloging of the specimens was conducted at Chicora laboratories in Columbia in January 2000. The materials have been curated at Fort Stewart and have been cataloged using that institution's accessioning practices which are an adaptation of those used by the University of Georgia at Athens. No specimens were identified which required conservation or stabilization. Specimens were packed in plastic bags and boxed. Field notes were prepared on pH neutral, alkaline buffered paper and photographic materials were processed to archival standards. All field notes, with archival copies, have also been curated with this facility.

Analysis of the historic collections follow professionally accepted standards with a level of suitability to the quantity and quality of the remains. In general, the temporal, cultural, and typological classifications of historic remains follow such authors as Cushion (1976), Godden (1964, 1985), Miller (1980, 1991), Nöel Hume (1978), Norman-Wilcox (1965), Peirce (1988), Price (1970), South (1977), and Walton (1976). Glass artifacts are identified using sources such as Jones (1986), Jones and Sullivan (1985), McKearin and McKearin (1972), McNally (1982), and Vose (1975). Sutton and Arkush (1996) provide an excellent overview of a broad range of other historic material, although primary sources will typically be provided in the text if the remains require a more detailed analysis.

RESULTS OF SURVEY

Introduction

The cultural resources identified during the intensive survey of the 322.5 ha NRMU D7.2 and the adjacent Sniper Range include a single historic site and one isolated occurrence (Figure19).

Both of these resources are recommended as ineligible for the National Register. The identified historic site is far too disturbed by military operations to enable it to address significant research questions. The isolated find consists of a single specimen and is, by definition, ineligible. The size, component, quad map, artifact number, and eligibility recommendations for each research are shown in Table 6.

Site 9LI875

Site 9LI875 is a historic scatter measuring 60 m north-south by 45 m east-west, yielding an occupation area of about 2,700 m² (Figure 20). The site is located east of the intersection of F.S. Roads 36 and 37D, south of the community of Bland Town previously reported by Panamerican Consultants (Little et al. 2000). The central UTM coordinates are N3532257 E430154 and the elevation is about 26 m above mean sea level (AMSL).

Table 6.
Archaeological Sites in the Survey Tract

Site	Component	Size	Artifact #	Quad Map	Eligibility
9LI874	Isolated find	1 m²	1	Taylors Creek	NE
9LI875	Historic site	2,700 m²	150	Taylors Creek	NE

NE=not eligible

The site was initially identified by shovel testing on Transects 12 and 13, which produced positive tests at 14 and 15 respectively. Survey crews also noticed a scatter of historic materials, including primarily concrete, bricks, mortar, and metal fragments. Further surface investigation revealed the remains of a military bunker (a mound of soil and timber debris) at the northeastern edge of the site area, as well as a borrow pit at the northwest edge. Further to the west is an old road bed, shown on the Fort Stewart maps, but no longer shown on the USGS topographic map. Concrete steps were found between Transects 12 and 13 (Figure 21). While still in the probable building area, these steps exhibit damage consistent with bulldozing (i.e., no longer tilted and cracked). Also present in this area were a number of trees evidencing the remains of metal turpentine collectors or v-shaped cuts typical of turpentine collection. Close inspection also revealed considerable military trash in the general area, as well as track ruts.

With the recovery of remains from two 30 m shovel tests, additional shovel tests were excavated at 15 m intervals from the positive tests on cardinal directions until at least two negative tests were obtained. The site area was therefore investigated by a series of 31 shovel tests. Of these, seven (or nearly 23%) were positive, producing 138 artifacts (excluding brick and charcoal, see Table 7). An additional two artifacts were identified on the surface (not collected were brick, concrete, and large metal fragments).

Of the 140 artifacts (again, excluding brick and charcoal), none offer particularly useful dates. The whiteware present on the site is consistent with materials manufactured throughout the nineteenth and early twentieth centuries. The brass shell casing is suggestive of the twentieth century. None of the glass is solarized, suggesting that the clear glass present on the site post-dates the first quarter of the twentieth century

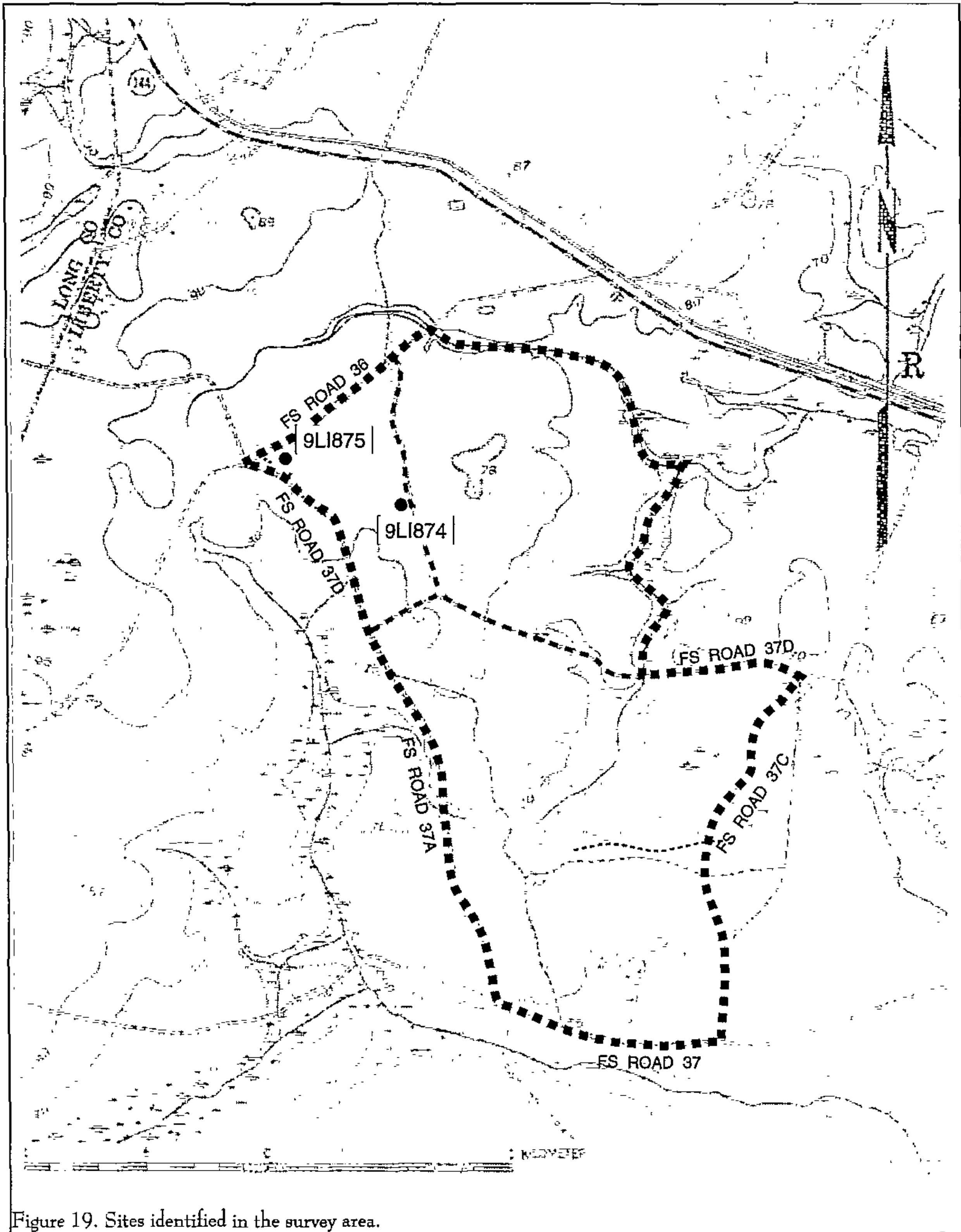

Figure 19. Sites identified in the survey area.

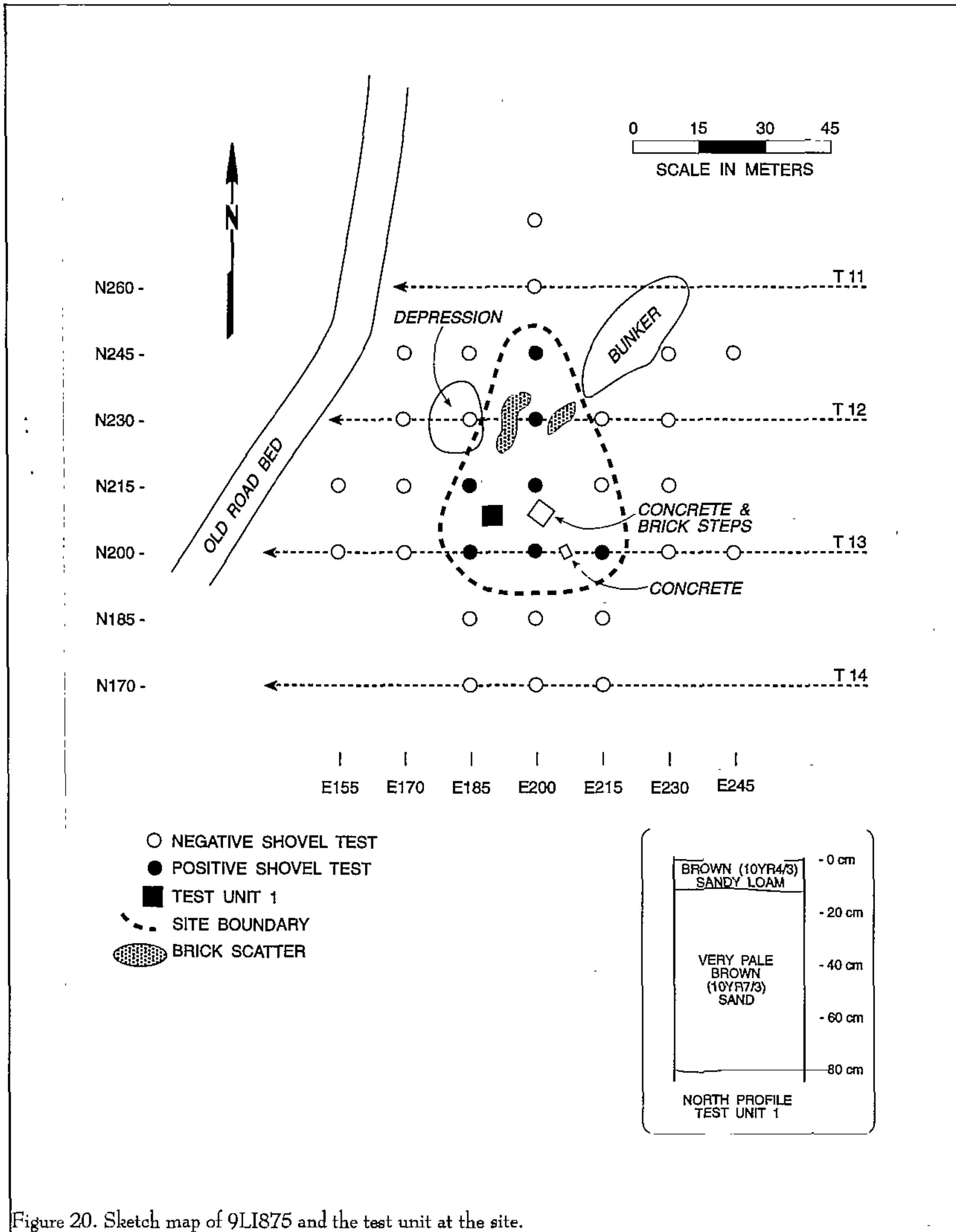

Figure 20. Sketch map of 9LI875 and the test unit at the site.

Table 7.
Artifacts Recovered from 9LI875

		N200	N200	N200	N215	N215	N230	N245	Test Unit 1	
	Surface	E185	E200	E215	E185	E200	E200	E200	0-10	10-20
whiteware, undec.		8			2					
glass, clear	1	4				2			1	2
glass, aqua		1		1		1			1	
glass, brown					1					
glass, melted							23			
window glass	1	2			1	6		1	1	
UID nail fragments		5				6	24	1		
machine cut nails		1					17			
wire nails		1				4	5			3
brick fragments		2			3	5				
shell casing		1								
strap buckle							1			
brass knob						1				
UID iron			1				2			
staples							1			
barbed wire fragments							5			
brass tube fragment							1			

(Jones and Sullivan 1986:13). Both wire and machine cut nails are present, suggestive of a twentieth century date. The types of artifacts present, however, are suggestive of a domestic site. Nails and window glass (as well as the brick) indicate a structure, while the ceramics and container glass are representative of kitchen group artifacts. Also present are a few items (such as the staple and barbed wire) which would normally be included in an activities group, although they may also represent materials not directly associated with the occupation.

The shovel tests in the site area reveal considerable diversity in the soil profiles. The A horizon varies from 9 to 35 cm, typically a brown (10YR4/3) sandy loam overlying a very pale brown (10YR7/3) sand. These profiles are generally consistent

Figure 21. Concrete steps at 9LI875, view to the west.

Figure 22. Test unit at 9LI875, view to the north.

with Stilson sands. The variation in the depth of the A horizon was likely caused by the extensive military operations which have taken place on the site.

A single 50 cm test unit was excavated northwest of the initial positive shovel test on Transect 13, in the area of densest artifact concentrations at the site (Figure 22). This test revealed a profile consistent with the shovel tests, although it had a very thin A horizon. Artifacts were found to only 20 cm below the surface.

The vegetation in the site area is dominated by relatively large oaks, with some pines and a number of ornamental plants, including wisteria (Figure 23). Given the distribution of the ornamentals, it is possible that this site was originally larger, but military activities have significantly reduced its size.

This site is not shown on either the Hinesville 15' topographic sheet from 1918, or the same sheet revised in 1950. Nor is it shown on the Taylors Creek 7.5' topographic sheet, published in 1958. By the 1973 photo revision, however, there are three buildings shown in this area. This information would suggest that the site post-dates 1958 and predates 1973. While the artifacts *could* date this late, we would have expected to also recover plastic and rubber items from this late a site.

On the other hand, informants have told David McKivergan (personal communication 1999) that a house site was situated in this area during the early twentieth century. Moreover, the site is situated immediately south of the location of Bland Town, a 1930s kin-based turpentine community (Little et al. 2000:70). It may be that the occupation post-dates the 1915 map, was completely abandoned by 1950, and was not plotted on either map. The artifacts

Figure 23. Vegetation in the vicinity of 9LI875.

from the site are consistent with a site dating from this period and this interpretation seems far more reasonable than a late twentieth century site. The late maps, documenting a series of structures in this area during the 1960s and 1970s, help explain some of the disturbance to the site.

This investigation reveals data sets including kitchen, architecture, arms, stable, and other activity artifacts. One problem with the assemblage, however, is that distinguishing between ca. 1930 and ca. 1960 glass or architectural items will prove very difficult. In fact, it is likely that the two could only be distinguished on the basis of the entire assemblage, or on the basis of the archaeological feature.

Yet, the integrity of the site suggests that this is likely impossible. Rutting, evidence of military use, and bulldozing have all taken a significant toll on the site. It is unlikely that the data sets can be separated or that other data sets, such as intact features, remains.

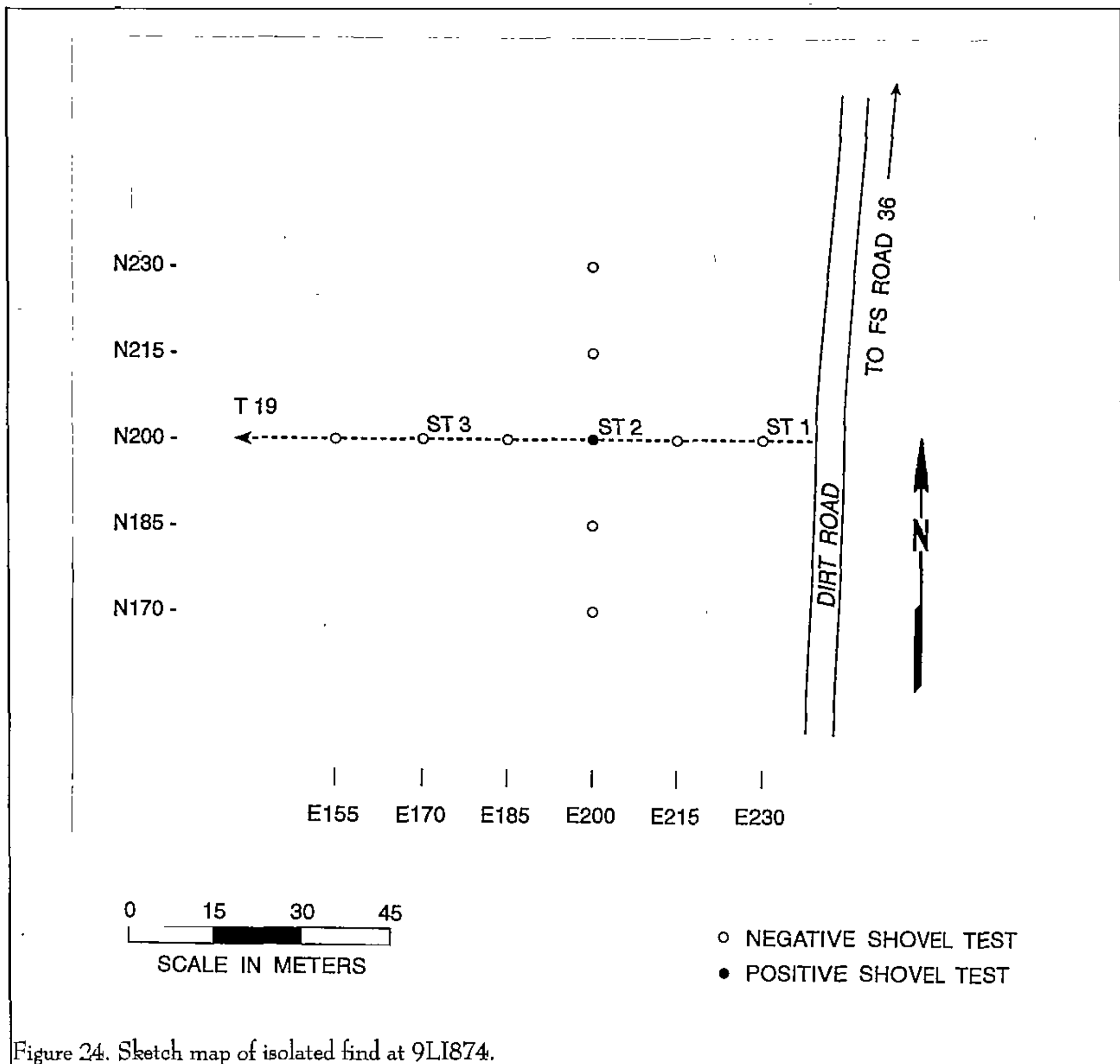

Figure 24. Sketch map of isolated find at 9LI874.

As a result, it is unlikely that this site can address the significant research questions appropriate for Bland Town. Consequently, the site is recommended not eligible for inclusion on the National Register and we recommend no additional management activities at this site.

Isolated Find at 9LI874

Find 9LI874 is an isolated white clay tobacco pipe stem. It was located in the upper 30 cm of Shovel Test 2 on Transect 19, about 40 m west of a dirt trail and 610 m south of its junction with F.S. Road 36. The site's central UTM coordinates are N3532104 E430701 and the elevation is about 25 m AMSL.

Figure 25. Vegetation in the vicinity of 9LI874, view to the south.

An additional four shovel tests (as well as Shovel Tests 1 and 3 on Transect 19, Shovel Test 2 on Transect 18 to the north and Shovel Test 2 on Transect 20 to the south) were excavated at 15 m intervals on cardinal directions (Figure 24). All were negative.

Shovel Test profiles in this area reveal about 30 cm of a very dark gray (10YR3/1) loamy sand overlying 40 cm of a light yellowish brown (10YR6/4) sandy loam. This profile is consistent with the Leefield Series. Although these soils are characterized as somewhat poorly drained, these soils appeared adequately drained during the survey. The vegetation in the site area consisted of mixed hardwoods and pines.

Based on information obtained from this survey, this find does not possess the data sets necessary for inclusion on the National Register and is recommended not eligible. No additional management activities are recommended, pending the concurrence of the lead federal agency and the Georgia State Historic Preservation Officer.

CONCLUSIONS

Introduction

As a result of this combination shovel test and pedestrian survey of 322.5 ha in the survey tracts encompassing NRMU D7.2 and the adjacent Sniper Range, one historic site and an isolated find were identified. Both are recommended as not eligible for inclusion on the National Register.

Issues discussed in these conclusions include an overview of current predictive modeling, which includes an examination of locational data, the use of historic maps as an indicator of historic sites on the survey tract, and an overview of what the one identified site may contribute to our understanding of Bland Town, identified to the north of the survey tract.

Historic Maps for the Survey Tract

The Hinesville 1918 and 1950 15' topographic maps were both examined to determine what, if any, historic resources might be shown within the survey tracts. A number of landscape features in the area changed between the creation of the two maps, most significantly the rise of Fort Stewart in an area which previously consisted primarily of small farms and pine trees. But in the survey area the most noticeable difference between the two maps are changes in the road network.

Figure 26 shows the survey boundaries overlaid on the Hinesville 1918 map. While a small segment of F.S. Road 36 at the northwest edge of the survey tract was the same in 1918 as it is today, other roads have changed dramatically. The 1918 map also very graphically reveals the extensive lowland in both the Sniper Range and also the low probability survey area of NRMU D7.2.

The 1918 map reveals only one structure within the survey tract. The building, likely a farmhouse, is situated north of a road running east-west through the swamp (although the house itself is situated on a finger of what is shown as drier land). This structure continues to be shown on the 1950 topographic map, but disappears by the time the 1958 Taylors Creek 7.5' USGS topographic map is issued.

We determined that the structure should be situated between Transects 80 and 100. The crew was instructed to pay particular attention to any evidence of brick or domesticated plants. Beyond this, no deviations were made to the methodology. The shovel tests on the transects placed in this area produced no cultural remains. The shovel tests revealed soils with reduced A horizons, indicative of the wet conditions, and many tests revealed black, wet or moist soil. Only two areas of turpentine trees were observed — on Transect 96 and 99. No other surface indications of any cultural activity were noted. The survey crews did not notice any domestic vegetation or concentrations of oaks or pecans, although vegetation was thick in numerous areas.

As we have noticed in previous surveys, the likelihood of finding any specific historic site is variable and depends on both the military (and other) activities which have taken place in the area, and the luck of the transect placement.

It appears that many historic sites were intentionally targeted by the military for removal. Structures often appear to be bulldozed, at times with even the rubble being removed. This leaves a very sparse archeological footprint, making recovery difficult. Even when structures didn't receive this particular attention, they were often located at the junctions of roads — areas where military activities seem to also congregate. In many cases this abundance of military activity, especially by tracked vehicles, has significantly reduced the archaeological visibility of the sites.

Moreover, there is increasing evidence that structural remains are far more likely to be found by close interval testing than by the 30 by 50 m shovel test

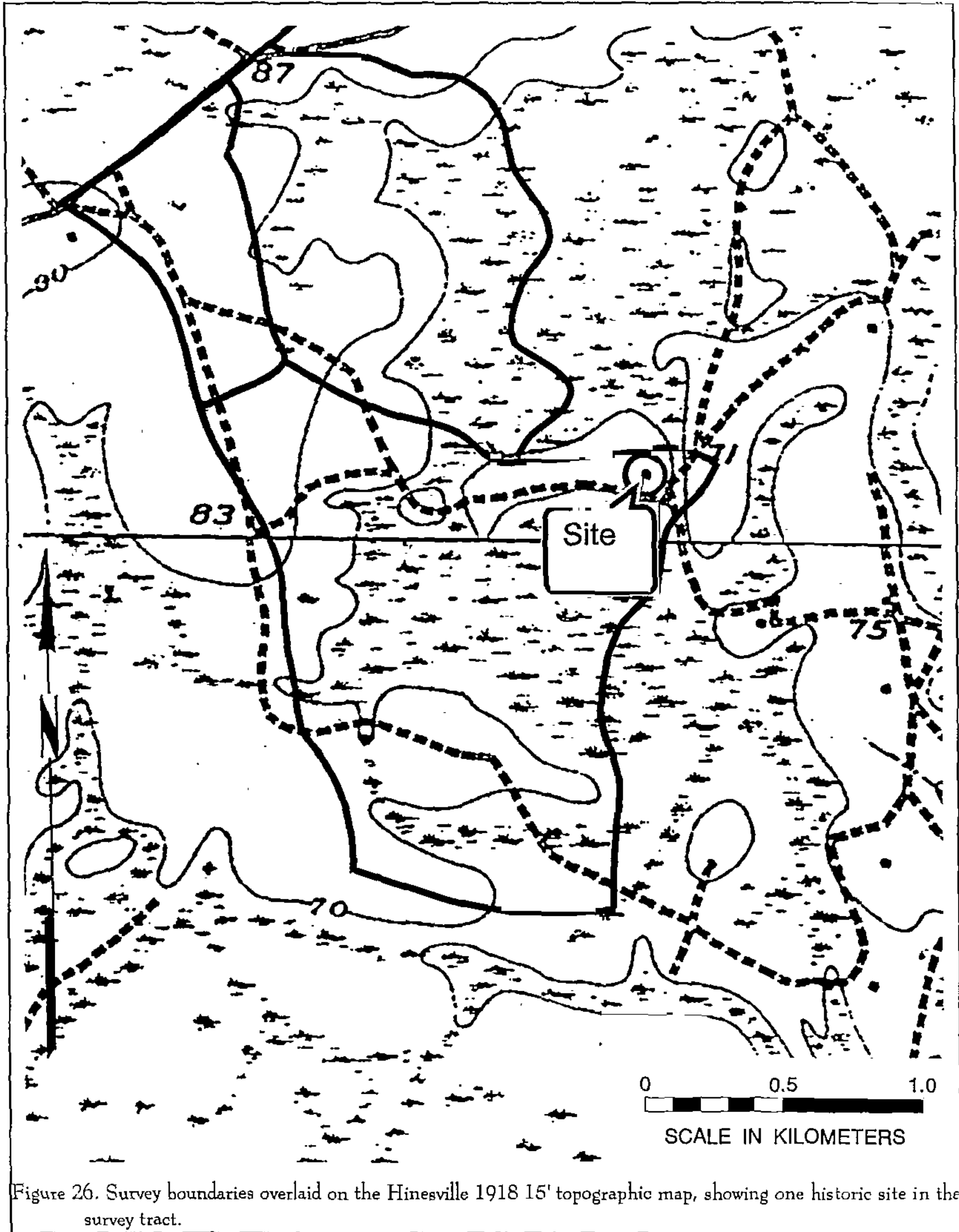

Figure 26. Survey boundaries overlaid on the Hinesville 1918 15' topographic map, showing one historic site in the survey tract.

placement used in low probability areas. For example, Keel (1999) reports that structures are best found with testing conducted at an 8 m interval and his work at Magnolia Plantation in Natchitoches, Louisiana pretty clearly demonstrates the loss of data that occurs when the interval is increased to even 15 m. With this in mind, it is exceedingly unlikely that the structures identified on historic maps will be consistently located using the current survey methodology. When they are found it is likely a convergence of good surface visibility and luck. This certainly seems to be the indication based on our previous studies at Fort Stewart.

Of course, the question is whether these resources warrant such a rigorous methodology, especially since so many seem to have been heavily impacted by military activities and are currently judged to be ineligible. This is not a question we can answer, but it is one that should be carefully considered by future researchers on Fort Stewart.

The Current Predictive Model and Land Use

As was briefly discussed in the **Natural Setting** chapter, Fort Stewart's predictive model has recently been revised taking into account the more than 15,378 ha of archaeological surveys undertaken on post (McKivergan 1998). McKivergan (1998:1) discounts distance to water as a critical factor in site probability based on the post's excessive surface waters. According to McKivergan (1998:1), less than 687 hectares of the entire post are more than 500 meters from a surface water source. This should be abundantly clear to any researcher who spends any time at all on the post.

The revised predictive model places more importance on soil types, rather than distance to water, as an indication of sites throughout the post. Based on the 15,378 hectares of archaeological survey, soil probabilities have been revised, and continue to be revised as more acreage is surveyed.

Currently, Albany loamy fine sands, Blanton sand, Bonifay fine sand, Dothan loamy sand (with slopes less than 2%), Fuquay loamy sand (with less than 5% slopes), Leefield loamy sand, Ocilla loamy fine sand and complex, Osier soils, Pelham loamy sands, Stilson loamy sand, and Tifton loamy sand soils are classified as high probability soils, suggesting that these soils will have a higher number of archaeological remains than other probability soils.

The current survey tract is very small and was composed almost entirely of lower probability soils. As previous mentioned, only three of these high probability soils are found in the survey tract — Leefield, Pelham, and Stilson. Combined, they account for only 18% of the acreage. Individually, the only soil which accounts for more than 10% of the survey tract is the Leefield Series, which is found on 10.4% of the tract.

It should probably, therefore, come as no real surprise that the one site identified was found on Leefield soils. What may be more surprising is that the other projected historic sites (which was not found), was apparently located in an area of Johnson and Bibb soils — soils which are reported to poorly to very poorly drained and to exhibit surface ponding of water (Looper 1982:27).

Does this mean that some poor farmer choose to place their family in the midst of a swamp? This doesn't seem likely and this site location shows one of the problems in reliance on soils for classification of survey methodology. USDA soil maps involve sampling, allowing small enclaves of one soil type to be hidden by surrounding soil units. In other words, the farm house being sought might be constructed on better drained soil which simply covers too small an area to be included in the mapping.

Moreover, historic site locations tend to be found near roads; a majority of which were public prior to the acquisition of the Fort Stewart property in the 1940s, as can be seen in the location of structures along roads on the historic maps for the survey tracts. Both the projected (but not found) and the identified site located during the survey were directly adjacent to roads.

A trend for historic site location has been noted in previous survey reports (Campo et al. 1999a:177; Campo et al. 1999b:98). Two historic sites located during the 1998 survey of NRMU A6.4, A8.1, and B24.2 were located along historic roads. A survey of nine tracts in Evans and Liberty Counties

found that of 38 historic sites and isolated occurrences, only six were not located along roads, but found between 50-200 m of a road (Campo et al. 1999:177). In the survey of tracts designated as "A-N," it was found that of the 30 historic sites, 13% were located at intersections, 30%, were located on a road, and 57% were within 50 to 510 m of a road (Trinkley et al. 1998). In the JAECK Drop Zone survey tract (Trinkley et al. 1996) two historic sites were recovered, both at intersections. Of the 32 sites recovered from two survey tracts in 1997 (Trinkley et al. 1997a), nine, or 28% were found at intersections, eight, or 25% were found on a road, and 47% were within 90 to 390 m of a road. Clearly, there is a correlation between road and historic site locations.

Although data from these studies is not adequate to support revisions in the Fort Stewart predictive model, they do suggest, first, that site density is likely to exhibit considerable variation, and second, that the factors affecting historic site locations are more complex than the current model suggests.

These factors, combined with concerns over the ability of the current methodology to locate small historic farmsteads, may be issues that Fort Stewart wishes to address in future research designs.

Site Density

The survey tract is located in the southern portion of Fort Stewart, south of Georgia State Highway 144. A single site was identified during the survey, yielding a site density of 0.31 site per km^2. This is far lower than previous Chicora studies. Even if the pedestrian survey acreage is removed, the site density is still only 0.43 site per km^2.

Information on Bland Town

The current survey has identified one additional component (9LI875) to the Bland Town settlement. Unfortunately, the site has been heavily impacted by military activities and is not likely able to address any significant research questions. Like other historic settlements, such as Taylors Creek, identified on Fort Stewart, abandonment, intentional demolition, and additional years of military operations have dramatically reduced not only the sites' archaeological visibility, but also their integrity.

SOURCES CITED

Anderson, David G.

1975 The Distribution of Prehistoric Ceramics in the Coastal Plain of South Carolina. Unpublished manuscript with appendices and data sheets, on file at the South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

1985 Middle Woodland Societies on the Lower South Atlantic Slope: A View from Georgia and South Carolina. *Early Georgia* 13:29-66.

1990 A North American Paleoindian Projectile Point Database. *Current Research in the Pleistocene* 7:67-69.

1992 Models of Paleoindian and Early Archaic Settlement in the Lower Southeast. In *Paleoindian and Early Archaic Period Research in the Lower Southeast: A South Carolina Perspective*, edited by David G. Anderson, Kenneth G. Sassaman, and Christopher Judge, pp. 28-47. Council of South Carolina Professional Archaeologists, Columbia.

1994 *The Savannah River Chiefdoms: Political Change in the Late Prehistoric Southeast*. University of Alabama Press, Tuscaloosa.

1995 *Test Excavations at Civil War Period Battery Halleck, Fort Pulaski National Monument, Chatham County, Georgia*. Interagency Archaeological Services Division, National Park Service, Atlanta.

Anderson, David G. and Glen T. Hanson

1988 Early Archaic Settlement in the Southeastern United States: A Case Study from the Savannah River Valley. *American Antiquity* 53:262-286.

Anderson, David G. and J.W. Joseph

1988 *Prehistory and History Along the Upper Savannah River: Technical Synthesis of Cultural Resource Investigations, Richard B. Russell Multiple Resource Area*. Vol. 1. Garrow and Associates, Inc., Atlanta. Prepared for the Savannah District, U.S. Army Corps of Engineers, Savannah, Georgia.

Anderson, David G. and Kenneth E. Sassaman (editors)

1996 *The Paleoindian and Early Archaic Southeast*. University of Alabama Press, Tuscaloosa.

Anderson, David G., Kenneth E. Sassaman, and Christopher Judge (editors)

1992 *Paleoindian and Early Archaic Period Research in the Lower Southeast: A South Carolina Perspective*. Council of South Carolina Professional Archaeologists, Columbia.

Anderson, David G., R. Jerald Ledbetter, and Lisa O'Steen

1990 *Paleoindian Period Archaeology of Georgia*. Georgia Archaeological Research Design Paper 6. University of Georgia Laboratory of Archaeology Series Report 28. Athens.

Anonymous
1940 *Certain Aboriginal Culture Elements in Chatham County, Georgia*. Chatham County Archaeological Project, Work Projects Administration of Georgia. Ms. on file, Chicora Foundation, Inc., Columbia.

Ayres, Edward L.
1995 *Southern Crossing: A History of the American South 1877-1906*. Oxford University Press, Oxford.

Bense, Judith A.
1994 *Archaeology of the Southeastern United States: Paleoindian to World War I*. Academic Press, New York.

Bense, Judith A., Hester A. Davis, Lorraine Heartfield, and Kathleen Deagan
1986 Standards and Guidelines for Quality Control in Archaeological Resource Management in the Southeastern United States. *Southeastern Archaeology* 5:52-62.

Braley, Chad O.
1990 The Lamar Ceramics of the Georgia Coast. In *Lamar Archaeology: Mississippian Chiefdoms in the Deep South*, edited by Mark Williams and Gary Shapiro, pp. 94-103. University of Alabama Press, Tascaloosa.

Braley, Chad O. and T.J. Price
1991 *Cultural Resources Survey of Selected (FY90) Timber Harvesting Areas, Fort Gordon, Richmond and Columbia Counties, Georgia.* Southeastern Archaeological Services, Athens. Prepared for the U.S. Army Corps of Engineers, Savannah District, and the Division of Forestry and Engineering, Fort Gordon, Georgia.

Browder, Tonya A., Richard D. Brooks, and David C. Crass
1993 *Memories of Home: Dunbarton and Meyers Mill Remembered*. Savannah River Archaeological Research Heritage Series 1, South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Bullen, Ripley P.
1975 *A Guide to the Identification of Florida Projectile Points*. Kendall Books, Gainesville.

Butler, Carroll
1998 *Treasures of the Long Leaf Pine*. Tarkel Publishing, Shalimar, Florida.

Butler, William B.
1987 Significance and Other Frustrations in the CRM Process. *American Antiquity* 52:820-829.

Cable, John S.
1982 Differences in Lithic Assemblages of Forager and Collector Strategies. In *Archaeological Survey and Reconnaissance Within the Ten-Year Floodpool Harry S. Truman Dam and Reservoir*, edited by Richard Taylor. Report submitted to the U.S. Army Corps of Engineers, Kansas City District.

Cable, John S. and James W. Mueller
1980 *The Cultural Resources Survey and Evaluation of US 421 from Siler City to Stanly, Chatham and Randolph Counties, North Carolina*. Commonwealth Associates, Inc., Jackson, Michigan. Submitted to North Carolina Department of Transportation, Raleigh.

Caldwell, Joseph R.
1943 *Cultural Relations of Four Indian Sites of the Georgia Coast*. Unpublished

M.A. Thesis, Department of Anthropology, University of Chicago, Chicago.

1970 Chronology of the Georgia Coast. *Southeastern Archaeological Conference Bulletin* 13:88-92.

Caldwell, Joseph R. and Catherine McCann
1941 *Irene Mound Site, Chatham County, Georgia*. University of Georgia Press, Athens.

Campbell, L. Janice, Mathilda Cox, and Thomas M. Prentice, Jr. (editors)
1996 *Fort Stewart and Hunter Army Airfield Historic Preservation Plan: Technical Synthesis Volume*. Report of Investigations 261. Prentice Thomas and Associates, n.p. Submitted to National Park Service, Southeast Division, Atlanta.

Campo, Rachel, Michael Trinkley, and Debi Hacker
1999a *Fort Stewart 8 and 10: An Archaeological Survey of Natural Resource Management Units A9.1, A12.1, A12.2, B7.2, B7.3, E6.3, F7.2, and F17.3, Fort Stewart, Evans and Liberty Counties, Georgia.* Research Series 258. Chicora Foundation, Inc., Columbia.

1999b *Fort Stewart 9: An Archaeological Survey of Natural Resource Management Units A6.4, A8.2, and B24.2.2, Fort Stewart, Bryan and Liberty Counties, Georgia.* Research Series 262. Chicora Foundation, Inc., Columbia.

1999c *Fort Stewart 11: A Survey of Red Cloud Alpha Range, Natural Resource Management Units B11.3 and B11.5, Fort Stewart, Liberty County, Georgia.* Research Contribution 280. Chicora Foundation, Inc., Columbia.

Chapman, Jefferson
1977 *Archaic Period Research in the Lower Little Tennessee River Valley, 1975: Icehouse Bottom, Harrison Branch, Thirty Acre Island, Calloway Island.* Report of Investigations 18. University of Tennessee, Knoxville.

1985a Archaeology and the Archaic Period in the Southern Ridge-an-Valley Province. In *Structure and Process in Southeastern Archaeology*, edited by Roy S. Dickens and H. Trawick Ward, pp. 137-179. The University of Alabama Press, University.

1985b *Tellico Archaeology: 12,000 Years of Native American History*. Reports of Investigations 43, Occasional Paper 5, University of Tennessee, Knoxville.

Clements, John
1989 *Georgia Facts: A Comprehensive Look At Georgia Today*. Clements Research II, Inc., Dallas.

Coakley, Robert W.
1989 The American Revolution: First Phase. In *American Military History*, pp. 41-69. Center of Military History, United States Army, Washington, D.C.

Coclanis, Peter
1989 *The Shadow of a Dream: Economic Life and Death in the South Carolina Low Country 1670-1920*. Oxford University Press, New York.

Coe, Joffre L.
1964 The Formative Cultures of the Carolina Piedmont. *Transactions of the American Philosophical Society* 54(5).

Coleman, Kenneth
1960 *Georgia History in Outline*. University

of Georgia Press, Athens.

Coleman, Kenneth (editor)
1991 *A History of Georgia*. Second Edition. University of Georgia Press, Athens.

Conner, Beverly H. and David J. Hally
1979 Lithic Materials and Artifacts. In *Archaeological Investigations of the Little Egypt Site (9 Mu 102), Murray County, Ga., 1969 Season*, edited by David J. Hally, pp. 218-254. Laboratory of Archaeology Series Report 18. University of Georgia, Athens.

Coulter, E. Merton
1960 *Georgia: A Short History*. University of North Carolina, Chapel Hill.

Crook, Morgan
1978 *Mississippian Period Community Organizations on the Georgia Coast*. Ph.D. dissertation, University of Georgia. University Microfilms, Ann Arbor.

Cushion, John P.
1976 *Pottery and Porcelain Tablewares*. Studio Vista, London.

Daniel, I. Randolph
1992 Early Archaic Settlement in the Southeast: A North Carolina Perspective. In *Paleoindian and Early Archaic Period Research in the Lower Southeast: A South Carolina Perspective*, edited by David G. Anderson, Kenneth E. Sassaman, and Christopher Judge, pp. 68-77. South Carolina Council of Professional Archaeologists, Columbia.

DeBow, J.D.B.
1854 *Statistical View of the United States*. A.O.P. Nicholson, Washington, D.C.

DePratter, Chester B.
1976 The Refuge Phase on the Coastal Plain of Georgia. *Early Georgia* 4:1-13.

1979 Ceramics. In The Anthropology of St. Catherines Island 2. The Refuge-Deptford Mortuary Complex, edited by David H. Thomas and Clark . Larsen, pp. 109-132. *Anthropological Papers of the American Museum of Natural History* 56(1).

1983 *Late Prehistoric and Early Historic Chiefdoms in the Southeastern United States*. Ph.D. dissertation, University of Georgia, Athens. University Microfilms, Ann Arbor.

1991 *W.P.A. Archaeological Excavations in Chatham County, Georgia: 193-1942*. Laboratory of Archaeology Series Report 29. University of Georgia, Athens.

DePratter, Chester B. and James D. Howard
1980 Indian Occupation and Geologic Historic of the Georgia Coast: A 5,000 Year Summary. In *Excursions in Southeastern Geology: The Archaeology- Geology of the Georgia Coast*, edited by James D. Howard, Chester B. DePratter, and Robert W. Frey, pp. 1-65. Georgia Department of Natural Resources, Environmental Protection Division, Atlanta.

Donahue, Jack, Gary A. Cooke, and Frank J. Vento
n.d. Temper Types in St. Catherines Pottery. Ms. on file, Chicora Foundation, Inc., Columbia.

Drucker, Lesley, Ronald Anthony, Susan Jackson, Susan Krantz, and Carl Steen
1984 *An Archaeological Study of the Little*

River-Buffalo Creek Special Land Disposal Tract. Carolina Archaeological Services, Columbia, South Carolina. Submitted to the U.S. Army Corps of Engineers, Savannah District, Savannah, Georgia.

Du Bois, W.E.B.
1992 Georgia: Invisible Empire State. In *These United States: Portraits of America from the 1920s*, edited by Daniel H. Borus, pp. 94-103. Cornell University Press, Ithaca.

Elliott, Daniel T. and Carl Steen
1992 *Jamestown Reconnaissance Survey.* Lamar Institute, Inc., Vanna, Georgia.

Elliott, Daniel T. and Roy Doyon
1981 *Archaeological and Historical Geography of the Savannah River Floodplain Near Augusta, Georgia.* Report 22. Laboratory of Anthropology, University of Georgia, Athens.

Elliott, Daniel T., J. Jerald Ledbetter, and Elizabeth A. Gordon
1994 *Data Recovery at Lovers Lane, Phinizy Swamp and the Old Dikes Sites, Bobby Jones Expressway Extension Corridor, Augusta, Georgia.* Occasional Papers in Cultural Resource Management 7. Georgia Department of Transportation, Atlanta.

Epenshade, Christopher, M. Virginia Markham, and Jeffrey Holland
1999 *Fort Stewart Testing D.O. #2 Archaeological Testing at Fort Stewart in Bryan, Evans, Liberty, and Long Counties, Georgia.* TRC Garrow Associates, Inc., Atlanta. Submitted to National Park Service, Southeast Region.

Fike, Richard
1987 *The Bottle Book: A Comprehensive Guide to Historic, Embossed Medicine Bottles.* Peregrine Smith Books, Salt Lake City.

Fish, Paul R.
1976 *Patterns of Prehistoric Site Distribution in Effingham and Screven Counties, Georgia: Results of an Archaeological Survey of the U.S.D.A. Soil Conservation Service in Ebenezer Creek Watershed.* Laboratory of Archaeology Series Report 11. University of Georgia, Athens.

Ferguson, Leland G.
1971 *South Appalachian Mississippian.* Ph.D. dissertation, University of North Carolina, Chapel Hill. University Microfilms, Ann Arbor, Michigan.

Frech, Mary L. and William F. Swindler (editors)
1973 *Chronology and Documentary Handbook of the State of Georgia.* Oceana Publications, Dobbs Ferry, New York.

Friedheim, William and Ronald Jackson
1996 *Freedom's Unfinished Revolution: An Inquiry into the Civil War and Reconstruction.* The New Press, New York.

Garrow, Patrick H. (editor)
1982 *Archaeological Investigations on the Washington, D.C. Civic Center Site.* Soil Systems, Inc., n.p.

Glassow, Michael A.
1977 Issues in Evaluating the Significance of Archaeological Resources. *American Antiquity* 42:413-420.

Goad, Sharon I.
1979 *Chert Resources in Georgia: Archaeological and Geological*

Perspectives. Report Number 21. Laboratory of Archaeology Series, University of Georgia, Athens.

Godden, Geoffrey A.
1964 *Encyclopaedia of British Pottery and Porcelain Marks*. Schiffer Publishing, Exton, Pennsylvania.

1985 *English China*. Barrie and Jenkins, London.

Goodyear, Albert C., John H. House, and Neal W. Ackerly
1979 *Laurens-Anderson: An Archaeological Study of the Inter-Riverine Piedmont*. Anthropological Studies 4, Occasional Papers of the Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Green, Michael D.
1979 *The Creeks: A Critical Bibliography*. Indiana University Press, Bloomington.

Green, William
1991 *The Search for Altamaha: The Archaeology and Ethnohistory of an Early 18th Century Yamasee Indian Town*. Unpublished M.A. Thesis, Department of Anthropology, University of South Carolina, Columbia.

Griffin, James B.
1943 An Analysis and Interpretation of the Ceramic Remains from Two Sites Near Beaufort, S.C. *Bureau of American Ethnology Bulletin* 133:155-168.

1985 Changing Concepts of the Prehistoric Mississippian Cultures of the Eastern United States. In *Alabama and the Borderlands: From Prehistory to Statehood*, edited by R.R. Badger and L.A. Clayton, pp. 40-63. University of Alabama Press, University, Alabama.

Groover, Robert L.
1987 *Sweet Land of Liberty: A History of Liberty County, Georgia*. W.H. Wolfe Associates, Roswell, Georgia.

Guernsey, Alfred H. and Henry M. Alden (editors)
1977 [1866] *Harpers Pictorial History of the Civil War*. Harper and Brothers, n.p. 1977 facsimile ed. Fairfax Press, n.p.

Harper, Roland M.
1922 Development of Agriculture in Lower Georgia from 1890 to 1920 with a Summary for the Whole State, 1850 to 1920. *Georgia Historical Quarterly* (6)326-354.

Hernden, G. Melvin
1968 Naval Stores in Colonial Georgia. In *Georgia Historical Quarterly* 52:426-433.

Hilliard, Sam B.
1984 *Atlas of Antebellum Southern Agriculture*. Louisiana State University Press, Baton Rouge.

Hodler, Thomas W. and Howard A. Schretter
1986 *The Atlas of Georgia*. Institute of Community and Area Development, University of Georgia, Athens.

Hogg, Ivan
1986 *Artillery in Color 1920-1963*. Arco Publishing, Inc., New York.

Hvidt, Kristian (editor)
1980 *Von Reck's Voyage: Drawings and Journal of Philip Goerg Friedrich von Reck*. The Beehive Press, Savannah, Georgia.

Jackson, Susan H., Lesley M. Drucker, and Debra K.

Martin
1988 *Cultural Resources Inventory Survey of the Brigade Maneuver Area, Fort Stewart, Georgia*. Resource Studies Series 115. Carolina Archaeological Services, Columbia.

Jefferies, Richard W.
1994 The Swift Creek Site and Woodland Platform Mounds in the Southeastern United States. In *Ocmulgee Archaeology, 1936-1986*, edited by David J. Hally, pp.71-83. The University Press of Georgia, Athens.

Jones, Grant D.
1978 The Ethnohistory of the Guale Coast Through 1684. In *The Anthropology of St. Catherines Island 1. Natural and Cultural History*, edited by David Hurst Thomas, Grant D. Jones, Roger S. Durham, and Clark Spencer Larsen, pp. 178-209. Anthropological Papers of the American Museum of Natural History 55(2).

Jeter, Paul
1987 *South Carolina Beverage Bottles 1880-1980*.

Jones, Olive R.
1986 *Cylindrical English Wine and Beer Bottles, 1735-1850*. National Historic Parks and Sites Branch, Quebec.

Jones, Olive R. and Catherine Sullivan
1985 *The Parks Canada Glass Glossary for the Description of Containers, Tableware, Flat Glass, and Closures*. National Historic Parks and Sites Branch, Parks Canada, Quebec.

Keel, Bennie C.
1999 *A Comprehensive Subsurface Investigation at Magnolia Plantation, 16NA295, Cane River Creole National Historic Park, Natchitoches, Louisiana*. Southeast Archaeological Center, National Park Service, Tallahassee.

Keller, J.H., A.R. Kelly, and E.V. McMichael
1962 The Mandeville Site in Southwestern Georgia. *American Antiquity* 27:336-355.

Kennedy, Stetson
1990 *Jim Crow Guide: The Way It Was*. Florida Atlantic University Press, Boca Raton.

Knight, Lucian Lamar
1917 *A Standard History of Georgia and Georgians*. Vol. 2. Lewis Publishing, Chicago.

Kovel, Ralph and Terry Kovel
1986 *Kovel's New Dictionary of Marks*. Crown Publishers, Inc., New York.

Küchler, A.W.
1964 *Potential Natural Vegetation of the Conterminous United States*. Special Publication 36. American Geographical Society, New York.

Lane, Mills
1993a *Standing Upon the Mouth of a Volcano: New South Georgia*. Beehive Press, Savannah.

1993b *Times that Prove People's Principles: Civil War in Georgia*. Beehive Press, Savannah.

Larsen, Clark Spencer (editor)
1990 *The Archaeology of Mission Santa Catalina de Guale: 2. Biocultural Interpretations of a Population in Transition*. Anthropological Papers of the American Museum of Natural History 68.

Larsen, Clark Spencer and David Hurst Thomas
1986 *The Archaeology of St. Catherines Island:5. The South Mound Complex.* Anthropological Papers of the American Museum of Natural History 63(1).

Larson, Lewis H., Jr.
1955 Unusual Figurine from the Georgia Coast. *Florida Anthropologist* 10(1-2):37-52.

1969 *Aboriginal Subsistence Technology on the Southeastern Coastal Plain During the Late Prehistoric Period.* Ph.D. dissertation, University of Michigan, Ann Arbor. University Microfilms, Ann Arbor, Michigan.

1978 Historic Guale Indians of the Georgia Coast and the Impact of the Spanish Mission Effort. In *Tacachale: Essays on the Indians of Florida and Southeastern Georgia During the Historic Period*, edited by Jerald Milanich and S. Proctor, pp. 120-140. University of Florida Press, Gainesville.

1980 *Aboriginal Subsistence Technology on the Southeastern Coastal Plain During the Late Historic Period.* Ripley P. Bullen Monographs in Anthropology and History 2. University Presses of Florida, Gainesville.

Ledbetter, R. Jerald
1995 *Archaeological Investigations at Mill Branch Sites 9WR4 and 9WR11, Warren County, Georgia*. Technical Reports Number 3. Interagency Archaeological Services Division, National Park Service, Atlanta.

Ledbetter, R. Jerald, David G. Anderson, Lisa D. O'Steen, and Daniel T. Elliott
1996 Paleoindian and Early Archaic Research in Georgia. In *The Paleoindian and Early Archaic Southeast*, edited by David G. Anderson and Kenneth G. Sassaman, pp. 270-287. The University of Alabama Press, Tuscaloosa.

Ledbetter, R. Jerald, Stephen A. Kowalewski, and Lisa O'Steen
1991 Chert of Southern Oconee County, Georgia. *Early Georgia* 9:1-13.

Legg, James B. and Steven D. Smith
1989 *"The Best Ever Occupied . . ." Archaeological Investigations of a Civil War Encampment on Folly Island, South Carolina.* Research Manuscript Series 209. S.C. Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Lehner, Lois
1988 *Lehner's Encyclopedia of U. S. Marks on Pottery, Porcelain and Clay*. Collector Books, Paducah, Kentucky.

Leigh, David S. And Andrew H. Ivester
1998 *Eolian Dunes at Fort Stewart, Georgia: Geomorphology, Age, and Archaeological Site Burial Potential.* Research Report 1. University of Georgia Geomorphology Laboratory, Athens.

Little, Keith J., James N. Ambrosino, and Paul D. Jackson
2000 *Archaeological Investigations at Fort Stewart: An Intensive Archaeological Survey of 9,732.6 Acres (NRMUs A9.4, A11.1, A13.2, A18.1, B2, B3.1, B3.2, B8.1, B8.2, B9.4, D11.1, E4.1, E4.2, E4.3, E6.5, F4.2, and Taylors Creek Maintenance Area in Liberty and Long Counties) at Fort Stewart, Georgia*. Panamerican Consultants Inc., Contract

1443CX509098044 Delivery Order 1 Final Repoort. Tuscaloosa, Alabama.

Looper, Edward E.
1982 *Soil Survey of Liberty and Long Counties, Georgia*. U.S. Department of Agriculture, Soil Conservation Service, Washington, D.C.

Mathews, Thomas D., Frank W. Stapor, Jr., Charles R. Richter, John V. Miglarese, Michael D. McKenzie, and Lee R. Barclay
1980 *Ecological Characterization of the Sea Island Coastal Region of South Carolina and Georgia*, vol. 1. Office of Biological Services, Fish and Wildlife Service, Washington, D.C.

McKearin, George L. and Helen McKearin
1972 *American Glass*. Crown Publishers, New York.

McNally, Paul
1982 Table Glass in Canada, 1700-1850. *Parks Canada History and Archaeology* 60.

McKivergan, David
1998 *Integrated Cultural Resources Management Plan for Fort Stewart and Hunter Army Airfield, Georgia.* Draft on file..

Majewski, Teresita and Michael J. O'Brien
1987 The Use and Misuse of Nineteenth-Century English and American Ceramics in Archaeological Analysis. In *Advances in Archaeological Method and Theory, Volume II,* edited by Michael Schiffer, pp. 97-209. Academic Press, Orlando.

Michie, James L.
1968 The Brier Creek Lanceolate. *The Chesopiean* 4:123.

1977 *The Late Pleistocene Human Occupation of South Carolina*. Unpublished Honor's Thesis, Department of Anthropology, University of South Carolina, Columbia.

Milanich, Jerald T.
1971 *The Deptford Phase: An Archaeological Reconstruction*. Ph.D. Dissertation, University of Florida. University Microfilms, Ann Arbor.

Milanich, Jerald T. and Charles H. Fairbanks
1980 *Florida Archaeology*. Academic Press, New York.

Miller, George L.
1980 Classification and Economic Scaling of 19th Century Ceramics. *Historical Archaeology* 14:1-40.

1991 A Revised Set of CC Values for Classification and Economic Scaling of English Ceramics from 1787 to 1880. *Historical Archaeology* 25:1-25.

Miller, J.J., M.L. Fryman, J.W. Griffin, C.D. Lee, and D.E. Swindell
1983 *A Historical, Archaeological, and Architectural Survey of Fort Stewart Military Reservation, Georgia*. Professional Archaeological Services, Department of Anthropology, University of Georgia, Athens.

Nevens, Allan
1971 *The War for the Union*. Vol. IV. Charles Scribner's Sons, New York.

Noel Hume, Ivor
1978 *A Guide to Artifacts of Colonial America*. Alfred A. Knopf, New York..

Norman-Wilcox, Gregor
1965 Pottery and Porcelain. In *The Concise Encyclopedia of American*

Antiques, edited by Helen Comstock, p. 132-161. Hawthorn, New York.

Oliver, Billy L.
1981 *The Piedmont Tradition: Refinement of the Savannah River Stemmed Point Type*. Unpublished Master's thesis, Department of Anthropology, University of North Carolina, Chapel Hill.

1985 Tradition and Typology: Basic Elements of the Carolina Projectile Point Sequence. In *Structure and Process in Southeastern Archaeology,* edited by Roy S. Dickens and H. Trawick Ward, pp. 195-211. The University of Alabama Press, University.

Paulk, Herschel L.
1980 *Soil Survey of Chandler, Evans, and Tattnall Counties, Georgia.* U. S. Department of Agriculture, Soil Conservation Service, Washington, D.C.

Peirce, Donald C.
1988 *English Ceramics: The Frances and Emory Cocke Collection.* High Museum of Art, Atlanta.

Price, Cynthia
1979 *19th Century Ceramics in the Eastern Ozark Boarder Region*. Monograph Series 1. Center for Archaeological Research, Southwest Missouri University, Springfield.

Reese, Trevor R. (editor)
1974 An Extract of the Rev. Mr. John Wesley's Journal From his Embarking for Georgia to his Return to London. In *Our First Visit in America: Early Reports from the Colony of Georgia 1732-1740*, pp. 185-242. Beehive Press, Savannah, Georgia.

Rose, Willie Lee
1964 *Rehearsal for Reconstruction: The Port Royal Experiment*. Oxford University Press, New York.

Rowland, Larry
1987 "Alone on the River:" The Rise and Fall of the Savannah River Rice Plantations of St. Peters Parish, South Carolina. *South Carolina Historical Magazine* 88(3): 121-150.

Rypkema, Donovan D.
1990 Preservation Under (Development) Pressure. *Vital Speeches of the Day* 56:268-273.

Sassaman, Kenneth E.
1985 A Preliminary Typological Assessment of MALA Hafted Bifaces from the Pen Point Site, Barnwell County, South Carolina. *South Carolina Antiquities* 17: 1-17.

1993 *Early Woodland Settlement in the Aiken Plateau: Archaeological Investigations at 38AK157, Savannah River Site, Aiken County, South Carolina*. Savannah River Archaeological Research Papers 3. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Sassaman, Kenneth E. and David G. Anderson
1990 Typology and Chronology. In *Native-American Prehistory of the Middle Savannah River Valley*, edited by Kenneth E. Sassaman, Mark J. Brooks, Glen T. Hanson, and David G. Anderson, pp. 143-216. Savannah River Archaeological Research Publication 1. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

1994 *Middle and Late Archaic Archaeological Records of South Carolina: A Synthesis for Research and Resource Management*. Council of South Carolina Professional Archaeologists, Columbia.

Sassaman, Kenneth E., Mark J. Brooks, Glen T. Hanson, and David G. Anderson
1990 *Native American Prehistory of the Middle Savannah River Valley*. Savannah River Archaeological Research Papers 1. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Schnell, Frank T. and Newell O. Wright, Jr.
1993 *Mississippian Period Archaeology of the Georgia Coastal Plain*. Laboratory of Archaeology Series Report 26. University of Georgia, Athens.

Schulz, Peter D., Betty J. Rivers, Mark M. Hales, Charles A. Litzinger, and Elizabeth A. McKee
1980 *The Bottles of Old Sacramento: A Study of Nineteenth-Century Glass and Ceramic Retail Containers: Part 1*. California Archaeological Reports 20. Department of Parks and Recreation, Sacramento.

Sears, William H.
1956 *Excavations at Kolomoki: Final Report*. University of Georgia Series in Anthropology 5. University of Georgia Press, Athens.

Shantz, H.L. and Zon, Raphael
1936 Natural Vegetation. In *Atlas of American Agriculture*, edited by O.E. Baker, pp. 1-29. U.S. Department of Agriculture, Washington, D.C.

Shelford, Victor E.
1974 *The Ecology of North America*. University of Illinois Press, Urbana.

Sherfy, Marcella and W. Ray Luce
1996 *Guidelines for Evaluating and Nominating Properties that Have Achieved Significance within the Last Fifty Years*. Bulletin 22. National Park Service, National Register of Historic Places, Washington, D.C.

Service, Elman R.
1966 *The Hunters*. Prentice-Hall, Englewood Cliffs, New Jersey.

Silver, Timothy
1990 *A New Face on the Countryside: Indians, Colonists, and Slaves in South Atlantic Forests, 1500-1800*. Oxford University Press, New York.

Smith, Betty A.
1972 *An Analysis of Regional Variations of Deptford Pottery*. Unpublished M.A. Thesis, Department of Anthropology, University of Georgia, Athens.

Smith, Bruce D.
1986 The Archaeology of the Southeastern United States: From Dalton to DeSoto, 10,500 -500 B.P. *Advances in World Archaeology* 5:1-88.

Smith, Hale G.
1948 Two Historical Archaeological Periods in Florida. *American Antiquity* 13:313-319.

Smith, Julia F.
1985 *Slavery and Rice Culture in Low Country Georgia, 1750-1860*. University of Tennessee Press, Knoxville, Tennessee.

Smith, Marvin T.
1978 *Excavations at Several Woodland and Archaic Camp and Workshop Sites in Laurens County, Georgia*. Laboratory of Archaeology Series Report 16.

University of Georgia, Athens.

Snow, Frankie

1977 *An Archaeological Survey of the Ocmulgee Big Bend Region: A Preliminary Report*. Occasional Papers from South Georgia 3. South Georgia College, Douglas, Georgia.

1990 Pine Barrens Lamar. In *Lamar Archaeology: Mississippian Chiefdoms in the Deep South*, edited by Mark Williams and Gary Shapiro, pp. 82-93. University of Alabama Press, Tascaloosa.

South, Stanley

1977 *Method and Theory in Historical Archaeology*. Academic Press, New York.

1993 *The Search for John Bartlam at Cain Hoy: America's First Creamware Potter*. Research Manuscript Series 219. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Stoltman, James B.

1974 *Groton Plantation: An Archaeological Study of a South Carolina Locality*. Monographs of the Peabody Museum 1. Harvard University, Cambridge.

Sutton, Mark Q. and Brooke S. Arkush

1996 *Archaeological Laboratory Methods: An Introduction*. Kendal/Hunt Publishing Company, Dubuque, Iowa.

Thomas, David Hurst

1987 *The Archaeology of Mission Santa Catalina de Guale: 1. Search and Discovery*. Anthropological Papers of the American Museum of Natural History 63(2).

Thomas, David Hurst and Clark Spencer Larsen

1979 *The Anthropology of St. Catherines Island 2. The Refuge-Deptford Mortuary Complex*. Anthropological Papers of the American Museum of Natural History 56(1).

Thomas, Kenneth H., Jr.

1975 *McCranie's Turpentine Still*. The Institute of Community and Area Development and the Georgia Department of Natural Resources, University of Georgia, Athens.

Thomas, Prentice M. Jr., L. Janice Campbell, and Mathilda Cox

1996 *Technical Synthesis of Cultural Resources Investigation at Fort Stewart and Hunter Army Airfield, Bryan, Chatham, Evans, Long, Liberty, and Tattnall Counties, Georgia*. Prentice Thomas and Associates, n.p. Prepared for National Park Service, Southeast Regional Office, Atlanta.

Toulouse, Julian Harrison

1971 *Bottle Makers and Their Marks*. Thomas Nelson, Inc., New York.

Townsend, Jan, John H. Sprinkle, Jr., and John Knoerl

1993 *Guidelines for Evaluating and Registering Historical Archaeological Sites and Districts*. Bulletin 36. National Park Service, National Register of Historic Places, Washington, D.C.

Trinkley, Michael

1976 *A Typology of Thom's Creek Pottery for the South Carolina Coast*. Unpublished M.A. Thesis, Department of Anthropology, University of North Carolina, Chapel Hill.

1980 *Investigation of the Woodland Period Along the South Carolina Coast*.

Ph.D. Dissertation, University of North Carolina, Chapel Hill. University Microfilms, Ann Arbor.

1985 The Form and Function of South Carolina's Early Woodland Shell Rings. In *Structure and Process in Southeastern Archaeology*, edited by Roy S. Dickens and H. Trawick Ward, pp. 102-118. University of Alabama Press, University, Alabama.

1990 *An Archaeological Context for the South Carolina Woodland Period*. Research Series 22. Chicora Foundation, Inc., Columbia.

1996 *Intensive Archaeological Survey of the Seccessionville North Tract, James Island, Charleston County, South Carolina*. Research Contribution 195. Chicora Foundation, Inc., Columbia.

Trinkley, Michael and Natalie Adams

1994 *Middle and Late Woodland Life at Old House Creek, Hilton Head Island, South Carolina*. Research Series 42. Chicora Foundation, Inc., Columbia.

Trinkley, Michael, Debi Hacker, and Natalie Adams

1995 *Broom Hall Plantation: "A Pleasant One and in a Good Neighborhood."* Research Series 44. Chicora Foundation, Inc., Columbia.

Trinkley, Michael, William B. Barr, and Debi Hacker

1996a *An Archaeological Survey of the 522 ha JAECK Drop Zone and 241 ha Taylors Creek Tract, Fort Stewart, Long and Liberty Counties, Georgia*. Research Series 186. Chicora Foundation, Inc., Columbia.

1996b *Fort Bragg 3: An Archaeological Survey of the 29.57 Ha Camp Mackall Special Forces Training Area and 776.55 Ha, Richmond, Cumberland, and Harnett Counties, North Carolina*. Research Contribution 193. Chicora Foundation, Inc., Columbia.

1997 *Fort Stewart 2 and 3: An Archaeological Survey of the 809 Ha Survey Tract "A" (Portions of Training Areas E-16 and E-20) and the 804 Ha Survey Tract "B" (Portions of Training Areas E-14 and E-15), Brigade Maneuver Area, Fort Stewart, Long and Tattnall Counties, Georgia*. Research Contribution 208. Chicora Foundation, Inc., Columbia.

Trinkley, Michael and Olga M. Caballero

1983 *Additional Archaeological, Historical, and Architectural Evaluation of 38HR127 and 38HR131*. South Carolina Department of Highways and Public Transportation, Columbia.

Trinkely, Michael, Jeanne Calhoun, and Debi Hacker-Norton

1985 *Archaeological and Historical Investigation of 38SU81, 38SU82, 38SU83, and 38SU86*. South Carolina Department of Highways and Public Transportation, Columbia.

Trinkley, Michael, Debi Hacker, and William Barr

1998 *Fort Stewart 4, 5, 6 and 7: An Archaeological Survey of 3,078.27 Ha Survey Tracts "A" through "N" (Portions of Training Areas A-11, B-9, D-8, D-9, D-11, D-14, E-7, E-8, E-11, E-13, E-14, E-15, E-19, E-20, and E-21), Fort Stewart, Liberty, Long and Tattnall Counties, Georgia*. Research Contribution 242. Chicora Foundation, Inc., Columbia.

U.S. Army

1941 *A Historical and Pictorial Review:*

Antiaircraft Training Center, Camp Stewart, Georgia. The Army and Navy Publishing Company, Inc., Baton Rouge.

Vose, Ruth Hurst
1975 *The Antique Collector's Guides: Glass.* Crescent Books, New York.

Walthall, John A.
1980 *Prehistoric Indians of the Southeast: Archaeology of Alabama.* University of Alabama Press, University.

Walton, Peter
1976 *Creamware and Other English Pottery at Temple Newsam House, Leeds: A Catalogue of the Leeds Collection.* Mannington Press, Bradford.

Ward, Trawick
1983 Whites Creek: The Second Time Around. *South Carolina Antiquities* 15:63-65.

Waring, Antonio J., Jr.
1968 The Refuge Site, Jasper County, South Carolina. In *The Waring Papers: The Collected Works of Antonio J. Waring, Jr.,* edited by Stephen B. Williams, pp. 198-208. Papers of the Peabody Museum of Archaeology and Ethnology 58.

Watts, W.A.
1971 Postglacial and Interglacial Vegetation History of Southern Georgia and Central Florida. *Ecology* 52:666-690.

1980 Late Quaternary Vegetation History at White Pond on the Inner Coastal Plain of South Carolina. *Quaternary Research* 13:187-199.

Watts, W.A. and M. Stuiver
1980 Late Wisconsin Climate of Northern Florida and the Origin of Species Rich Deciduous Forests. *Science* 210:325-327.

Weir, Robert
1983 *South Carolina: A History.* KTO Press, Millwood, New York.

Wells, Tom
1998 Nail Chronology: The Use of Technologically Derived Features. *Historical Archaeology* 32 (2): 78-99.

Whitehead, Donald R.
1965 Palynology and Pleistocene Phytogeography of Unglaciated Eastern North America. In *The Quaternary of the United States,* edited by W.E. Wright, Jr. and David G. Fry. Princeton University Press, Princeton.

1973 Late-Wisconsin Vegetational Changes in Unglaciated Eastern North America. *Quaternary Research* 3(4):621-631.

Willey, Gordon R.
1949 *Archaeology of the Florida Gulf Coast.* Smithsonian Miscellaneous Collections 113.

1966 *An Introduction to American Archaeology.* Vol. 1: North and Middle America. Prentice-Hall, Englewood Cliffs, New Jersey.

Williams, Mark and Daniel T. Elliott (editors)
1998 *A World Engraved: An Archaeology of the Swift Creek Culture.* The University of Alabama Press, Tuscaloosa.

Williams, Stephen B. (editor)
1968 *The Waring Papers: The Collected Works of Antonio J. Waring, Jr.* Papers of the Peabody Museum of Archaeology and Ethnology 58.

Wrenn, Tony P. and Elizabeth D. Mulloy
1972 *America's Forgotten Architecture*. Pantheon Books, New York.

Wright, H.E., Jr.
1976 The Dynamic Nature of Holocene Vegetation: A Problem of Paleoclimatic Biogeography, and Stratigraphic Nomenclature. *Quaternary Research* 6:581-596.

Writers' Program
1990 *Georgia: The WPA Guide to its Towns and Countryside*. Compiled by the Writers' Program of the Works Progress Administration. University of South Carolina Press, Columbia.

Yarbrough, Bird and Paul Yarbrough
1986 *Taylors Creek: A Story of the Community and Her People, 1760-1980*. A Press, Greenville.

Zierden, Martha, Elizabeth J. Reitz, and Daniel Weinand
1995 *Initial Archaeological Testing: The Nathaniel Russell House*. Archaeological Contributions 24. The Charleston Museum, Charleston, South Carolina.

APPENDIX 1.
CATALOG OF RECOVERED MATERIALS

Acc #	Box #	Bag	County	Site	Contractor	Project	Prov.	Artifacts	Date	Cataloger
055	1	1	Liberty	9LI874	Chicora	Fort Stewart 12	N200E200	1 white clay pipestem	1-5-00	DH
055	2	2	Liberty	9LI875	Chicora	Fort Stewart 12	Surface	1 glass, clear	1-5-00	DH
055	2	2	Liberty	9LI875	Chicora	Fort Stewart 12	Surface	1 window glass	1-5-00	DH
055	1	3	Liberty	9LI875	Chicora	Fort Stewart 12	N200E185	8 whiteware, undecorated	1-5-00	DH
055	2	3	Liberty	9LI875	Chicora	Fort Stewart 12	N200E185	1 glass, aqua	1-5-00	DH
055	2	3	Liberty	9LI875	Chicora	Fort Stewart 12	N200E185	4 glass, clear	1-5-00	DH
055	2	3	Liberty	9LI875	Chicora	Fort Stewart 12	N200E185	5 UID nail fragments	1-5-00	DH
055	2	3	Liberty	9LI875	Chicora	Fort Stewart 12	N200E185	1 machine cut nail	1-5-00	DH
055	2	3	Liberty	9LI875	Chicora	Fort Stewart 12	N200E185	1 wire nail fragment	1-5-00	DH
055	2	3	Liberty	9LI875	Chicora	Fort Stewart 12	N200E185	2 window glass	1-5-00	DH
055	2	3	Liberty	9LI875	Chicora	Fort Stewart 12	N200E185	1 brass shell casing	1-5-00	DH
055	2	3	Liberty	9LI875	Chicora	Fort Stewart 12	N200E185	2 brick fragments	1-5-00	DH
055	2	3	Liberty	9LI875	Chicora	Fort Stewart 12	N200E185	1 vial charcoal	1-5-00	DH
055	2	4	Liberty	9LI875	Chicora	Fort Stewart 12	N200E200	1 strip of iron	1-5-00	DH
055	2	5	Liberty	9LI875	Chicora	Fort Stewart 12	N200E215	1 glass, aqua	1-5-00	DH
055	1	6	Liberty	9LI875	Chicora	Fort Stewart 12	N215E185	2 whiteware, undecorated	1-5-00	DH
055	2	6	Liberty	9LI875	Chicora	Fort Stewart 12	N215E185	1 glass, brown	1-5-00	DH
055	2	6	Liberty	9LI875	Chicora	Fort Stewart 12	N215E185	1 window glass	1-5-00	DH
055	2	6	Liberty	9LI875	Chicora	Fort Stewart 12	N215E185	3 brick fragments	1-5-00	DH
055	2	7	Liberty	9LI875	Chicora	Fort Stewart 12	N215E200	2 glass, clear	1-5-00	DH
055	2	7	Liberty	9LI875	Chicora	Fort Stewart 12	N215E200	1 glass, aqua	1-5-00	DH
055	2	7	Liberty	9LI875	Chicora	Fort Stewart 12	N215E200	6 window glass	1-5-00	DH
055	2	7	Liberty	9LI875	Chicora	Fort Stewart 12	N215E200	6 UID nail fragments	1-5-00	DH
055	2	7	Liberty	9LI875	Chicora	Fort Stewart 12	N215E200	4 wire nails	1-5-00	DH
055	2	7	Liberty	9LI875	Chicora	Fort Stewart 12	N215E200	1 brass knob	1-5-00	DH
055	2	7	Liberty	9LI875	Chicora	Fort Stewart 12	N215E200	1 vial charcoal	1-5-00	DH
055	2	7	Liberty	9LI875	Chicora	Fort Stewart 12	N215E200	5 brick fragments	1-5-00	DH
055	2	8	Liberty	9LI875	Chicora	Fort Stewart 12	N230E200	23 glass, melted	1-5-00	DH
055	2	8	Liberty	9LI875	Chicora	Fort Stewart 12	N230E200	24 UID nail fragments	1-5-00	DH
055	2	8	Liberty	9LI875	Chicora	Fort Stewart 12	N230E200	7 machine cut nail fragments	1-5-00	DH
055	2	8	Liberty	9LI875	Chicora	Fort Stewart 12	N230E200	10 machine cut nails	1-5-00	DH

Acc #	Box #	Bag	County	Site	Contractor	Project	Prov.	Artifacts	Date	Cataloger
055	2	8	Liberty	9LI875	Chicora	Fort Stewart 12	N230E200	5 wire nails	1-5-00	DH
055	2	8	Liberty	9LI875	Chicora	Fort Stewart 12	N230E200	1 staple	1-5-00	DH
055	2	8	Liberty	9LI875	Chicora	Fort Stewart 12	N230E200	5 barbed wire fragments	1-5-00	DH
055	2	8	Liberty	9LI875	Chicora	Fort Stewart 12	N230E200	1 strap buckle	1-5-00	DH
055	2	8	Liberty	9LI875	Chicora	Fort Stewart 12	N230E200	1 brass tube fragment	1-5-00	DH
055	2	8	Liberty	9LI875	Chicora	Fort Stewart 12	N230E200	2 flat UID iron fragments	1-5-00	DH
055	2	8	Liberty	9LI875	Chicora	Fort Stewart 12	N230E200	1 vial charcoal	1-5-00	DH
055	2	9	Liberty	9LI875	Chicora	Fort Stewart 12	N245E200	1 window glass	1-5-00	DH
055	2	9	Liberty	9LI875	Chicora	Fort Stewart 12	N245E200	1 UID nail fragment	1-5-00	DH
055	2	10	Liberty	9LI875	Chicora	Fort Stewart 12	TU2 0-10cm	1 glass, aqua	1-5-00	DH
055	2	10	Liberty	9LI875	Chicora	Fort Stewart 12	TU2 0-10cm	1 glass, clear	1-5-00	DH
055	2	10	Liberty	9LI875	Chicora	Fort Stewart 12	TU2 0-10cm	1 window glass	1-5-00	DH
055	2	11	Liberty	9LI875	Chicora	Fort Stewart 12	TU2 10-20c	2 glass, clear	1-5-00	DH
055	2	11	Liberty	9LI875	Chicora	Fort Stewart 12	TU2 10-20c	3 wire nails	1-5-00	DH