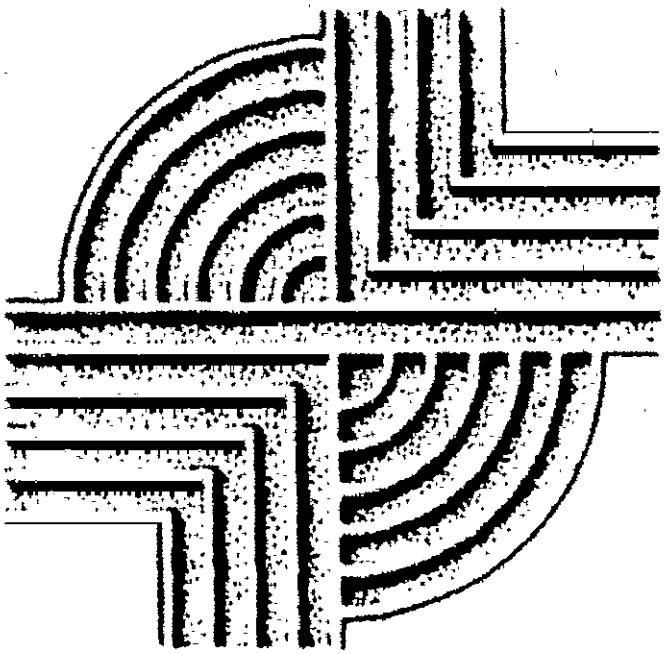
FORT STEWART 11: A SURVEY OF RED CLOUD ALPHA RANGE, NATURAL RESOURCE MANAGEMENT UNITS B11.3 AND B11.5, FORT STEWART, LIBERTY COUNTY, GEORGIA



CHICORA RESEARCH CONTRIBUTION 280

FORT STEWART 11: A SURVEY OF RED CLOUD ALPHA RANGE, NATURAL RESOURCE MANAGEMENT UNITS B11.3 AND B11.5, FORT STEWART, LIBERTY COUNTY, GEORGIA

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ABSTRACT

This study represents a pedestrian archaeological survey of the Red Cloud Alpha Range including Natural Resource Management Unit B11.3 and a portion of Natural Resource Management Unit B11.5 in Liberty County. A total of 372.31 ha were surveyed for this project. The area contains unexploded ordnance and can not be tested using subsurface methods. The scope of work specified that the entire project area be pedestrian surveyed as high probability using transects spaced at 30 m intervals.

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. Fort Stewart has determined that any sites located in areas containing unexploded ordnance are ineligible for the National Register of Historic Places, because the information that may make the sites eligible under Criterion D are inaccessible (letter from Mr. Richard Cloues, Deputy State Historic Preservation Officer to Lt. Colonel Carey W. Brown, dated June 22, 1998).

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 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.

Two archaeological sites and one isolated occurrence (which was also assigned a site number) were identified during the survey. None of these sites are recommended as eligible, and no further management work is recommended, pending concurrence by the lead agency and the Georgia State Historic Preservation Division.

Identified Sites and Eligibility

Tract	Site	Assessment
B11.3, B11.5	9LI733	Ineligible
	9LI734	Ineligible
	9LI735	Ineligible

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ACKNOWLEDGMENTS

While the work at Fort Stewart was conducted in compliance with various national historic preservation requirements, we wish to thank all of those involved for their support and interest in the project. In particular, at Fort Stewart, we thank Mr. David McKivergan (Base Consulting Archaeologist) and Mr. Brian Greer (ORISE intern) for their assistance. Dr. David G. Anderson (National Park Service) administered the project for Fort Stewart. We appreciate his interest, encouragement, and confidence. Ms. Kimberly Washington (National Park Service) assisted us in navigating the paperwork for payment — a seemingly essential component of science.

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 Ms. Jennifer Dean, Mr. Todd Hejlik, Mr. Rick Hill, and Ms. Lori Thompson. The survey was conducted from April 6-13, 1999 and we appreciate their dedication and hard work. Thanks also to Ms. Jan Schweikert who helped process the collections.

INTRODUCTION

Survey Background

Investigations for the Red Cloud Alpha Range incorporated Natural Resource Management Unit B11.3 and a portion of Natural Resource Management Unit B11.5, 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 372.31 ha. Fort Stewart is located in southeastern Georgia and encompasses portions of Liberty, Long, Tattnall, Evans, and Bryan counties (Figure 1). Natural Resource Management Units (referred to as NRMU) B11.3 and B11.5 are 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, which encompasses Red Cloud Alpha Range, NRMU B11.3, and a portion of NRMU B11.5, is bounded to the north by the swamp south of Canoochee River. The west side of the tract is bounded by Georgia State Highway 144 and the east side is bounded by an unnamed dirt road. The south side of the tract is bounded by a dirt road that runs along the north side of the Red Cloud Bravo Range, and after intersecting Fort Stewart Road 22C, the south boundary becomes a small creek (Figure 3).

The survey tract features a number of different vegetation types. Low grass grows on the range and maintained areas around the range. The areas surrounding the range are generally forested with mixed hardwoods and pines. Areas adjacent to creeks and the Canoochee river have typical swampy vegetation including cypress trees, tall grasses, and dense scrub underbrush. In general, the tract had very poor ground visibility, ranging from 50% in some parts of the range to no visibility in the heavily forested areas. Two areas south and north of the range contain tank and vehicle remnants that appear to have been burned during military training. In addition, the range and the areas immediately surrounding the range contain a large amount of unexploded ordnance.

The survey tract was examined using transects spaced at 30 m intervals. Shovel testing is not permitted in this tract due to the presence of unexploded ordnance within the tract. Field technicians pedestrian surveyed the tract along these transects, noting and collecting any artifacts and bricks. Upon collection of an artifact, an intensive surface collection was 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 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.

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

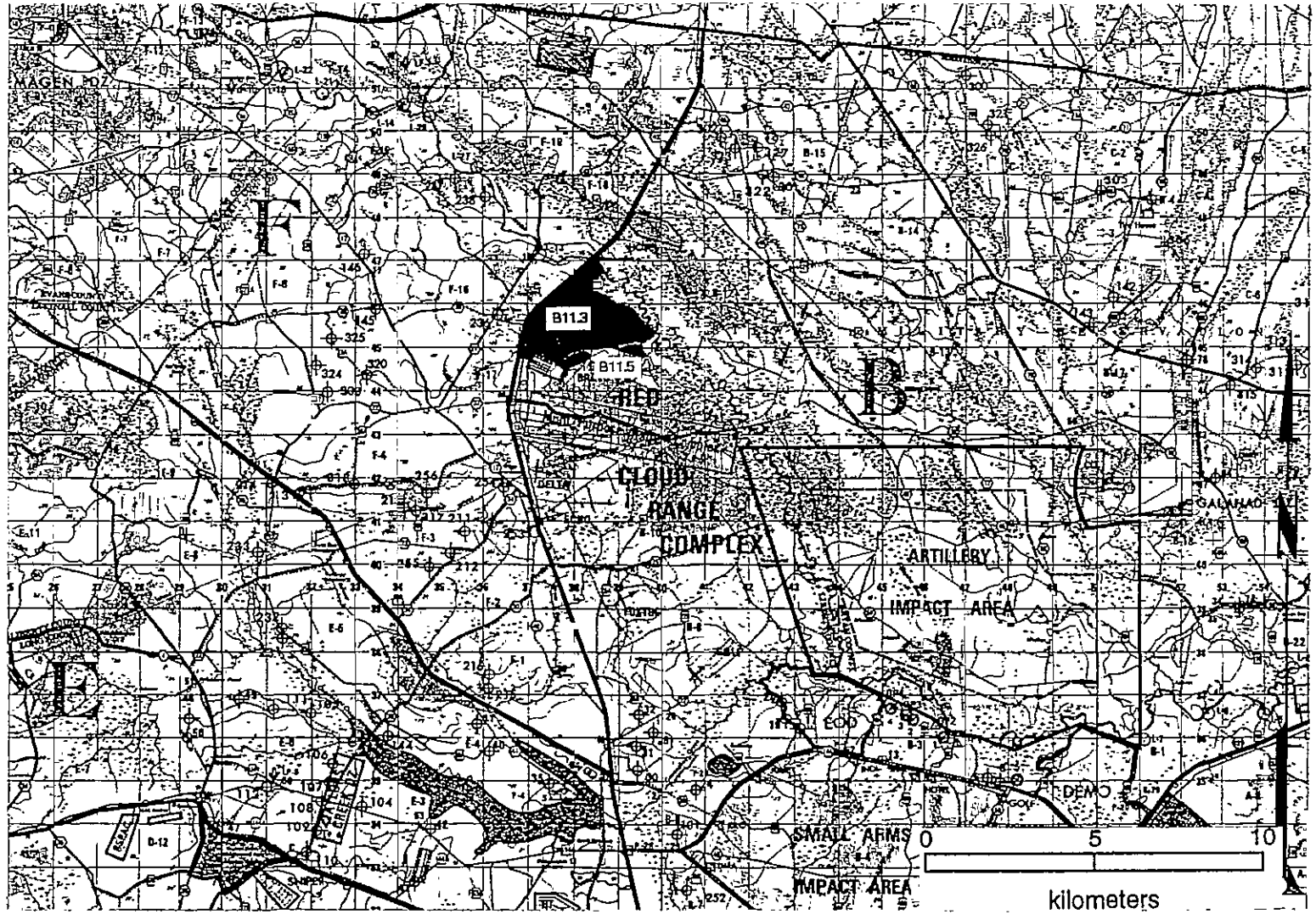

Figure 2. Location of survey tract Red Cloud Alpha Range, NRMU B11.3, and B11.5 in Liberty County, Georgia (base map is Fort Stewart Military Installation Map, 1992, 1:50,000).

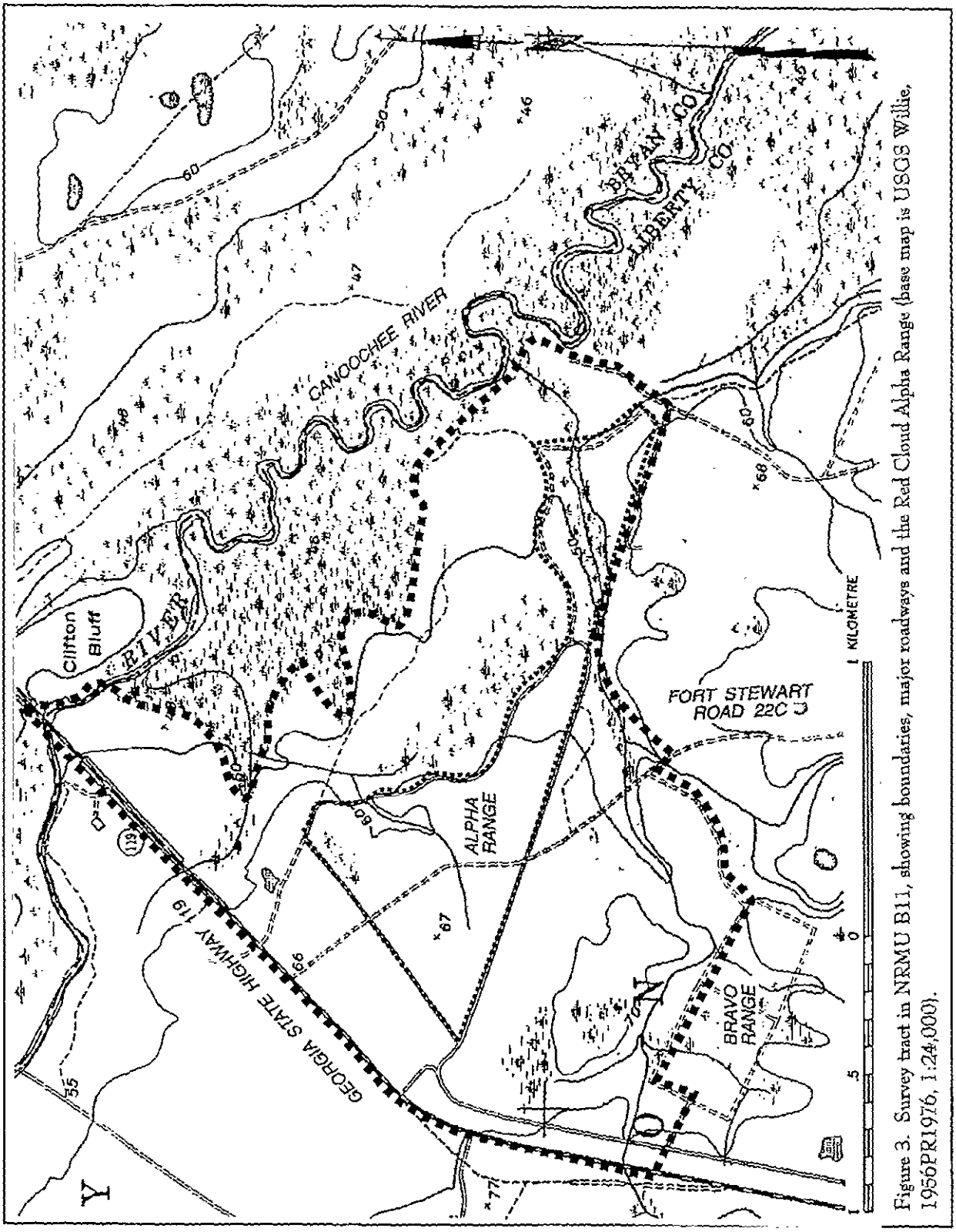

Figure 3. Survey tract in NRMU B11, showing boundaries, major roadways and the Red Cloud Alpha Range (base map is USGS Willie, 1956PR1976, 1:24,000).

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°		

A total of two sites and one isolated occurrence were identified in the survey tract. The isolated find (9LI735) is a prehistoric projectile point. The two identified sites (9LI733 and 9LI734) are historic scatters. These sites and find are deemed ineligible for the National Register of Historic Places by Fort Stewart due to the presence of unexploded ordnance in the tract.

All of the historic sites contained artifacts dating from the mid-nineteenth to the early twentieth centuries. The isolated prehistoric occurrence dates to the Late Archaic period.

Surveys were conducted from April 6-13, 1999. Principal Investigator for the project was Dr. Michael Trinkley and Field Director for the project was Ms. Rachel Campo. Field crew consisted of Ms. Jennifer Dean, Mr. Todd Hejlik, Mr. Rick Hill, and Ms. Lori Thompson.

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 054. 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 B11, lies east of Georgia State Highway 119 and north of Georgia State Highway 144. Watersheds in the tract drain into the Canoochee River, located north 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 large cleared areas overcome with secondary growth (Figure 5), man-made earthworks, and the deposition of military refuse (Figure 6). Natural landscape changes have been produced by floods that deposited alluvial soils.

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.

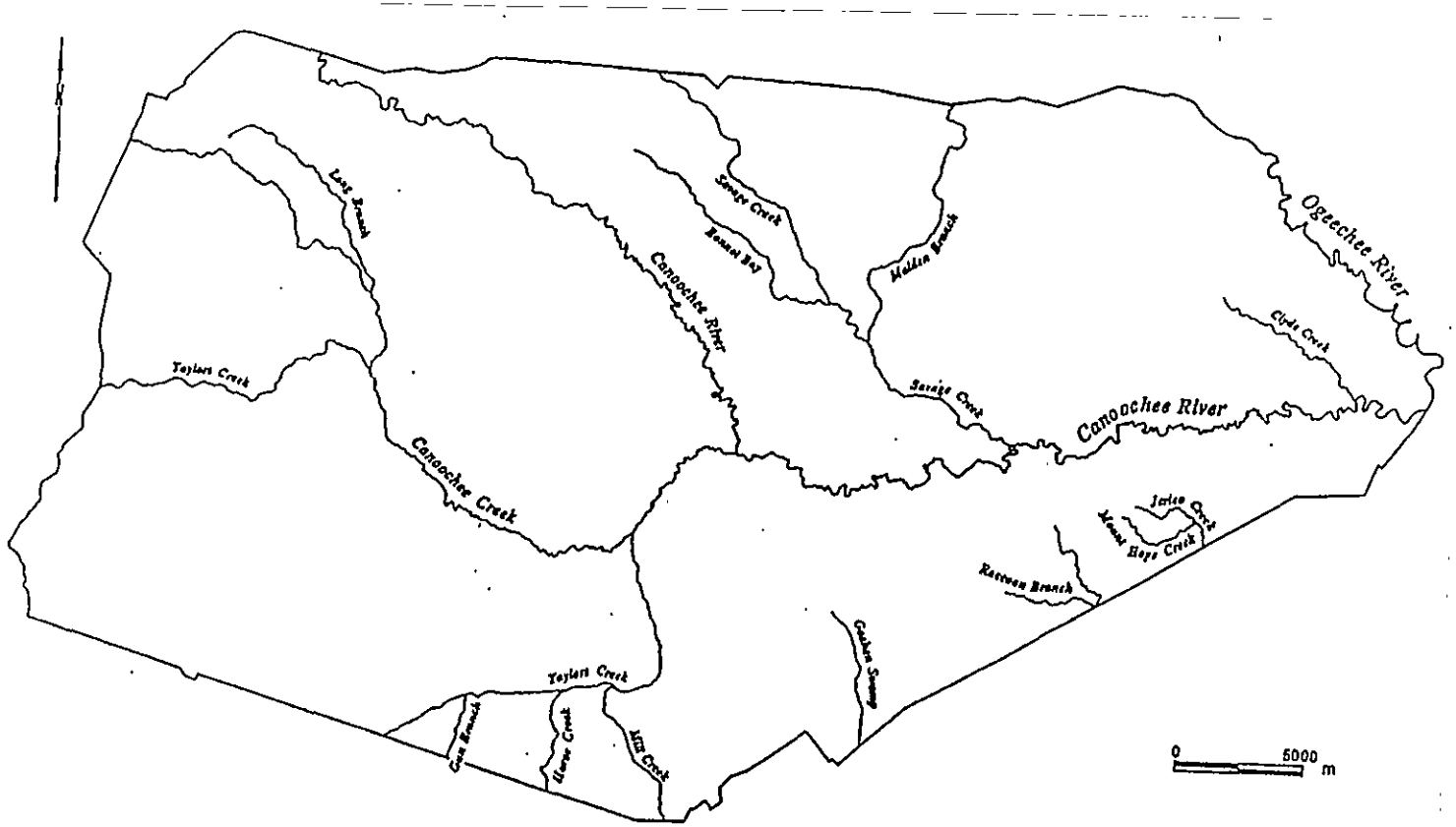

Figure 4. Watersheds in Fort Stewart, Georgia (adapted from Campbell et al. 1996:Figure 2-9).

Figure 5. Cleared area in Red Cloud Alpha Range overgrown with secondary grass, view to the north.

Figure 6. Military refuse in survey tract, view to the northeast.

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

Soil Series	Drainage	Water Table	A Horizon	B Horizon
Albany	somewhat poor	30-76 cm	0-1.24 m, loamy fine sand to fine sand	1.24-1.78 m, clay to sandy clay
Bibb	poor	<15 cm	0-27.94 cm, loam	27.94 cm-1.78 m, sandy loam
Blanton	moderately well	1.5-1.8 m	0-1.17 m, loamy sand to sand	1.72-2.01 m, sandy oam to sandy clay loam
Centenary	moderately well	1-1.5 m	0-10.16 cm, clay loam	10.16cm-1.52 m, clay loam to clay
Chipley	moderately well	61-91 cm	0-15.24 cm, sand	15.24 cm-2.13 m, sand*
Echaw	moderately well	76 cm-1.5m	0-1.19 m, fine sand	1.19-1.78 m, fine sand
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
Ocilla	somewhat poor	30-76 cm	0-86 cm, loamy fine sand	86 cm-1.83 m, sandy loam to sandy clay loam
Osier	poor	<30 cm	0-27.94 cm, loamy sand	27.94 cm-1.65 m, loamy sand to sand*
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
**Adapted from Looper 1982

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, 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).

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 in that series, including a discussion of the depths, hues, values and chromes for each A and B horizon. A brief description of soil series, based on discussion by Looper, is found in Table 2. Soil series will be discussed below for the survey tract. 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 each tract.

Table 3.
Soil Types by Percentage in the Survey Tract

Soil Type	Percentage
Johnston and Bibb soils	23%
Pelham loamy sand	16%
Mascotte fine sand	16%
Blanton sand	8%
Chipley sand	7%
Ellabelle loamy sand	6%
Leefield loamy sand	5%
Osier and Bibb soils	5%
Pits	4%
Albany loamy fine sand	3%
Ocilla loamy fine sand	3%
Stilson loamy sand	3%
Echaw and Centenary find sand	1%

The survey tract consists of Albany, Blanton, Chipley, Echaw and Centenary, Ellabelle, Johnston and Bibb, Leefield, Mascotte, Pelham, Ocilla, Osier and Bibb, and Stilson soils. Looper (1982) also records pits for the survey tract (Figure 7). The soil series have water tables that occur from less than 15 cm to 1.8 m below the surface (Table 2). Wet swampy areas in the tract were located near the Canoochee River and the creek that runs through the southern portion of the tract. The soils on the tract can not be generalized, but represent a range of loams to sandy clays (Table 2).

Johnston and Bibb soils, very poor and poorly drained soils, represent the greatest percentage of soil types in the tract at 23% of the total soils (Table 3). In the survey tract, these soils are located only near the Canoochee River and the small creeks. In general, these soils are ponded or flooded in winter and spring, and have a water table that occurs less than 46 cm below the surface (Looper 1982:27). Together Pelham loamy sand and Mascotte fine sand contribute a large percentage to the total soils at 16% each. Both soils are poorly drained with high water tables. Pelham soils are commonly flooded in the winter, while Mascotte soils are most wet during the summer and winter months.

More than half of the soils in the survey tract are very poorly or poorly drained, with moderately well drained soils representing 19% of the tract (Table 4). Soils in this survey tract were not designated as high or low probability because shovel testing was not undertaken.

Table 4.
Percentages of Drainage Characteristics in the Survey Tract

Drainage Characteristic	Percentage
Poor	38%
Very poor	29%
Moderately well	19%
Somewhat poor	11%
Pits	3%

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, and the type of drainage.

Although survey tracts in this project were not divided into high and low probability areas, the use of probability designations is especially well suited for work at Fort Stewart, which includes many soils of poor drainage.

Predictive modeling for Fort Stewart suggests that

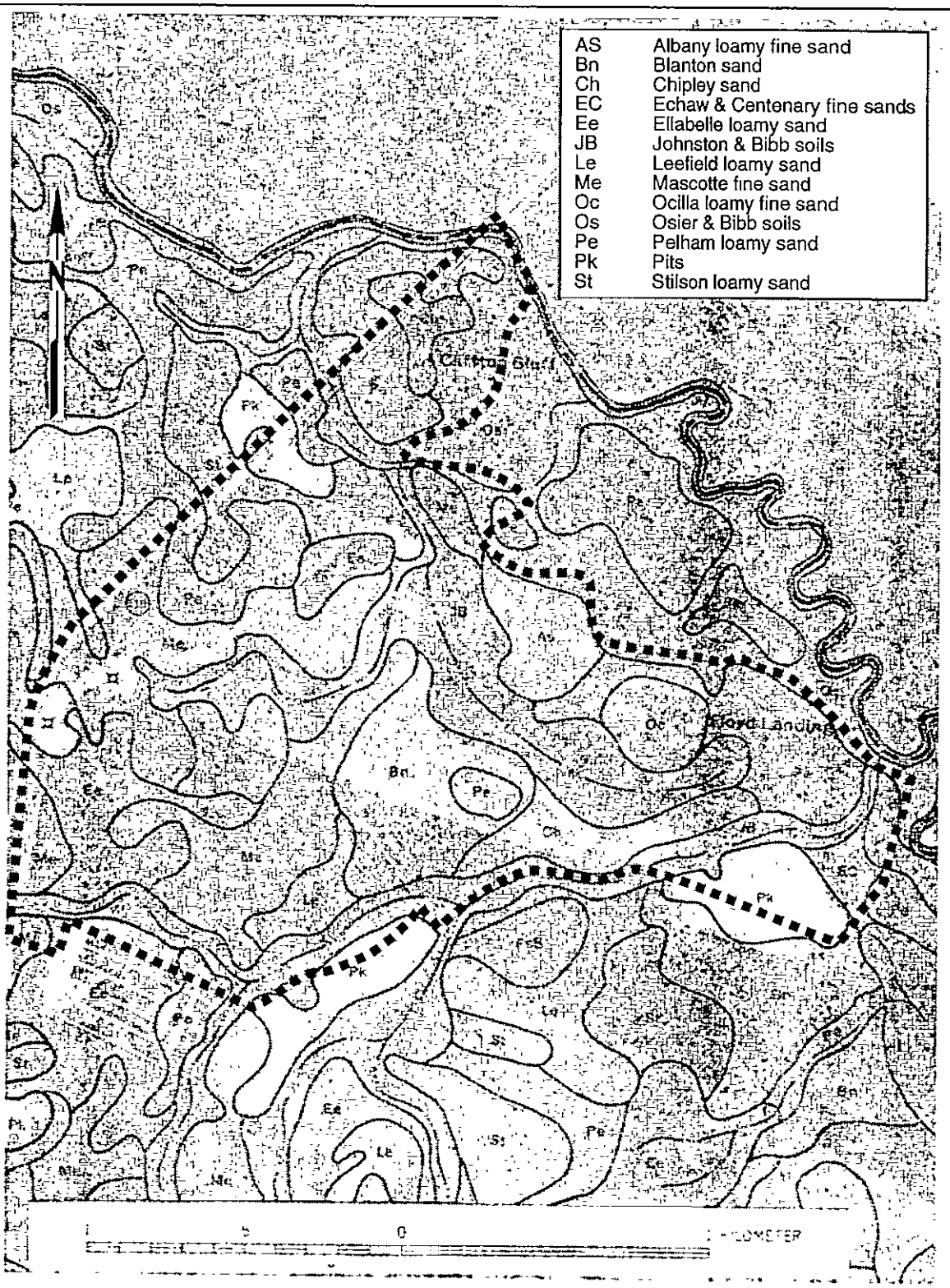

Figure 7. Soil types in survey tract, Liberty County (adapted from Looper 1982).

Table 5.
Sites, Soils, and Drainage in the Survey Tract

Site #	Type	Soil	Drainage	Probability *	Water Table
		Survey Tract Training Area B-11			
9LI733	Historic scatter	Johnston and Bibb soils	Poorly drained	Low	<46, <15 cm
9LI734	Historic scatter	Chipley sand	Moderately well drained	Indeterminate	61-91 cm
9LI735	Prehistoric find	Osier and Bibb soils	Poorly drained	High	<30 cm, <15 cm

*Probability designations used are from McKivergan 1998.

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 15378 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.

Table 6.
Percentages of Sites by
Drainage Characteristic of Soils

	Sites		
Drainage	#	%	Drainage %
Poor	2	67%	38%
Moderately well	1	33%	19%

Table 5 lists all sites located, the associated soils of the sites, the soils' drainage, the probability designation, and the water table depth associated with the soils. The probabilities listed are taken from McKivergan 1998. Each of the three sites recorded during this survey, are located on three different soil probabilities and three different soils, which are poorly and moderately well drained. 9LI733, a historic scatter, is located on Johnston and Bibb soils, poorly drained soils of low probability. 9LI734 is located on Chipley sand, a moderately well drained soil with high probability. Prehistoric find 9LI735 is located on Osier and Bibb soils, poorly drained soils of high probability.

The model for historic sites presented by Campbell et al. (1996:227-230) suggests that there is a trend towards the presence of historic sites on well drained soils. In this survey tract, the historic sites are located on low and indeterminate probability soils. It is more likely that historic sites are located in proximity to roads, and transportation areas, such as railroad depots, rather than exclusively in association with specific soils.

Soil permeability may be a likely reason why sites are situated in certain locations and not others. Table 6 lists the percentages of sites found by drainage characteristic and the total percentage of drainage characteristics for all of the survey tracts. While it may seem that most sites are found on poorly drained soils, the percentage of soil drainage types in each survey tract, discussed previously, must be taken into account (Table 4 and 6).

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).

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 Alpha range as an active training range. 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 to very sparse in others (Figures 8 and 9). Historic site locations quite often contain oaks and ornamental vegetation (Figure 10), 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

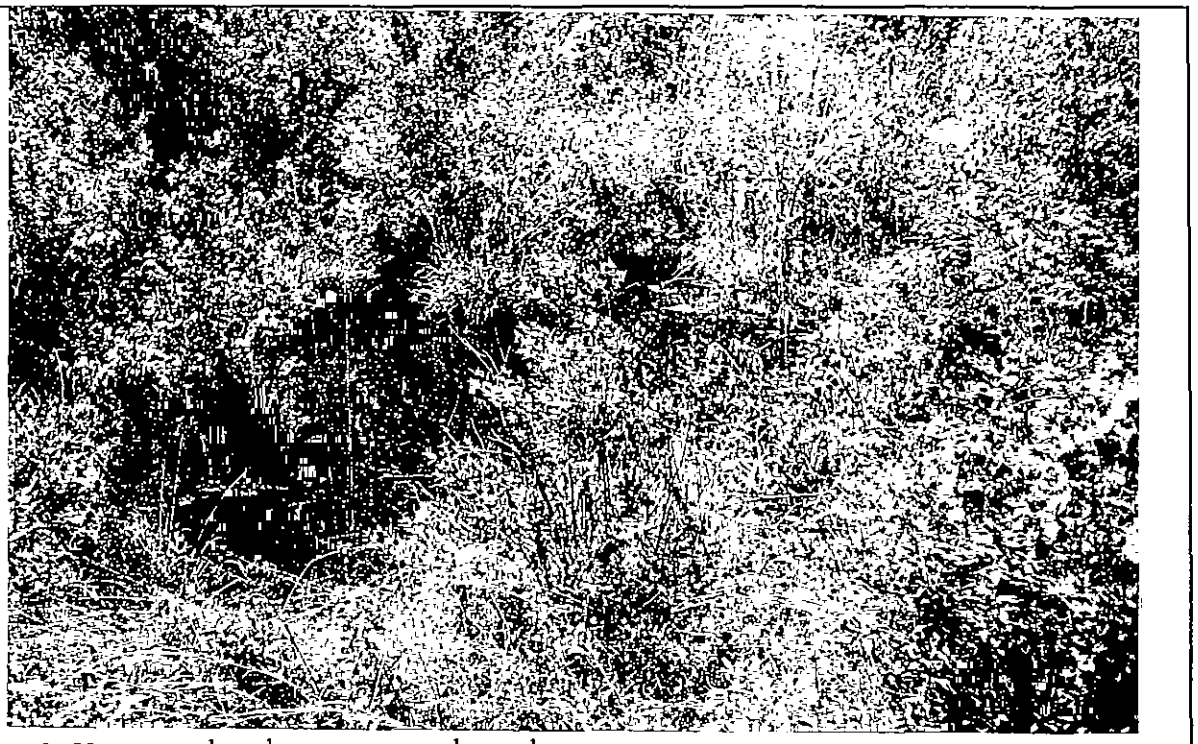

Figure 8. Vegetation along drainage, view to the south.

Figure 9. Sparse vegetation in survey tract, view to the south.

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 was little more than a subsidiary interest (Campbell et al. 1996:106-107). By the postbellum cotton and corn were still common, 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).

Naval stores have played a major part in Georgia's Coastal Plain economy since the nineteenth century (Campbell et al. 1996:79-80). 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 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

Figure 10. Large pecans and oak at 9LI734, view to the north.

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.

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 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 11 offers a generalized view of Georgia's cultural periods.

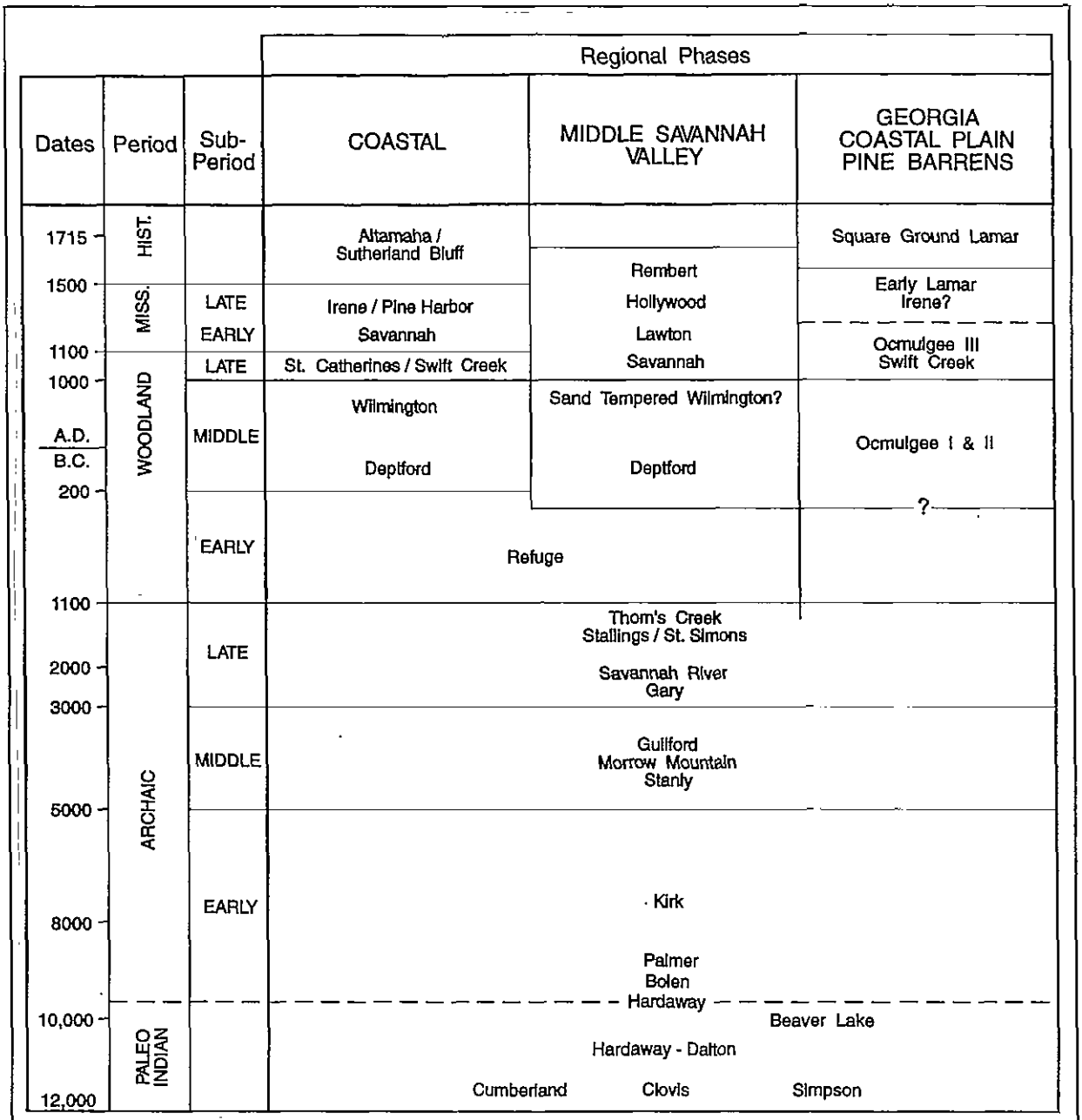

Figure 11. Cultural periods for the Georgia coastal region (adapted from Braley 1990; DePratter 1979:Table 30; Sassaman et al., 1990:Table 1).

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 12). 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 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

[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).

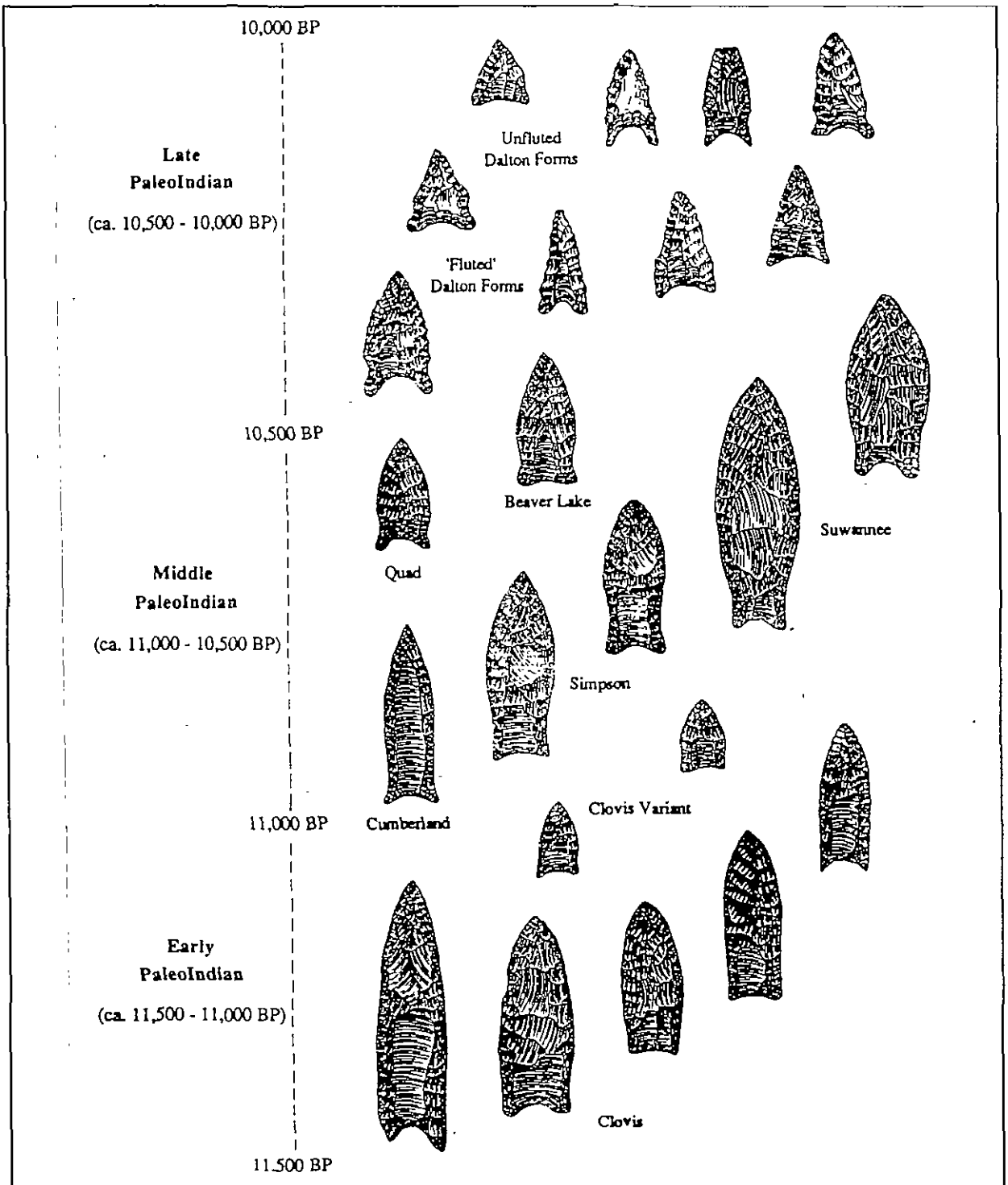

Figure 12. Diagnostic Paleoindian projectile points and suggested chronology for Georgia and the Carolinas (adapted from Anderson 1992:Figure 3.1).

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" 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.

[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."

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 — doughnut 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 (Barr 1996). 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 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 (Barr 1996; 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 7 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

Table 7.
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.

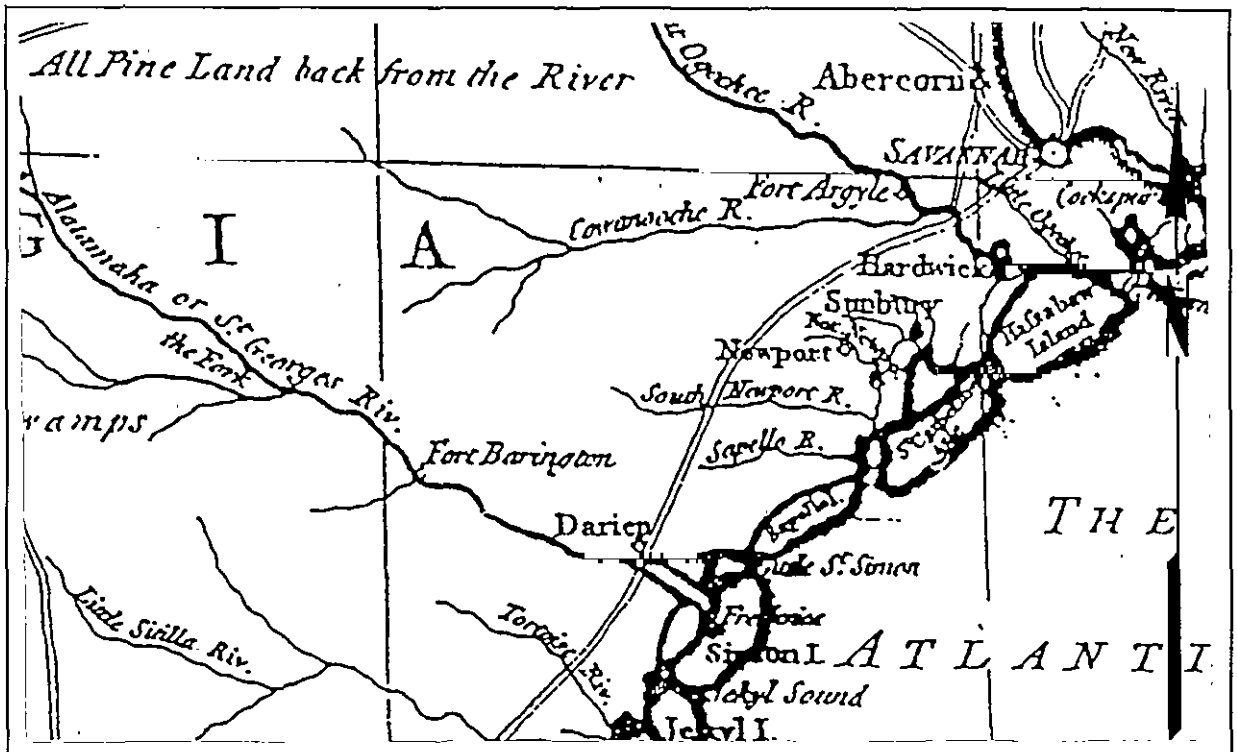

Figure 13. A portion of Hinton's 1779 *A New and Accurate Map of the Province of Georgia* showing the project area (no scale provided on original map).

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 13. 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.

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).

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.

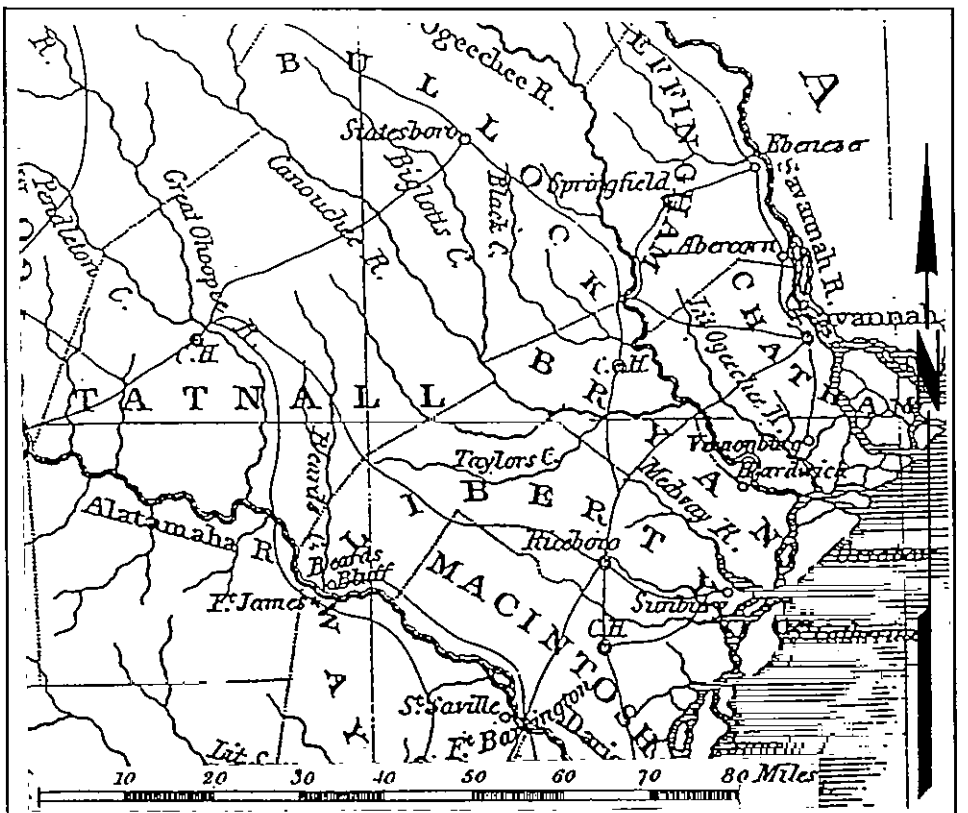

Figure 14. A portion of Finley's *Georgia* showing the project area in 1824.

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." Tennesseans, 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.

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 14) 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.

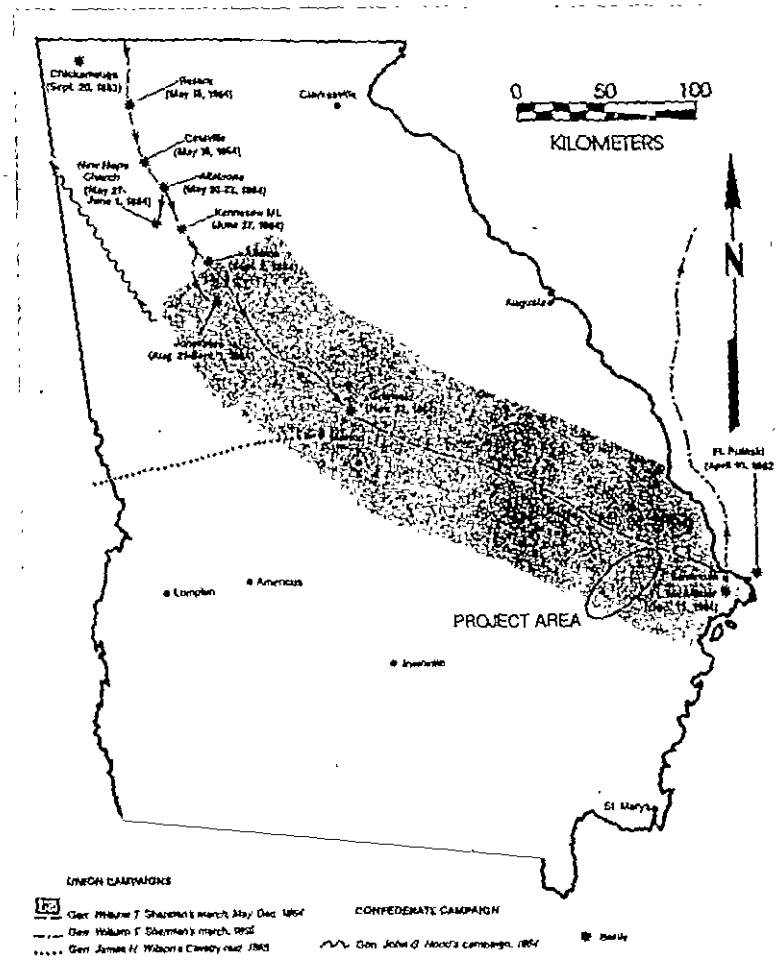

Figure 15. The Civil War in Georgia, showing the project area.

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 15). 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.

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 16). 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 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 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 Sherman's army and its 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).

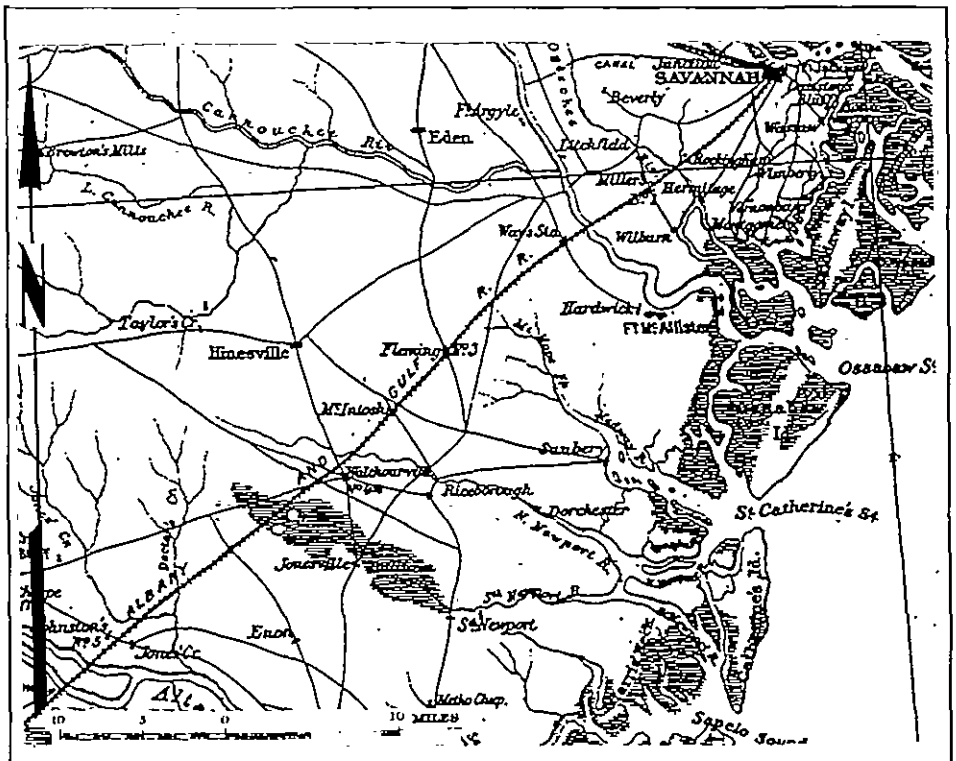

Figure 16. The project area in 1865 (adapted from *Atlas to Accompany the Official Records of the Union and Confederate Armies*, Plate CXLIV).

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.

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) 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

[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).

> 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. 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

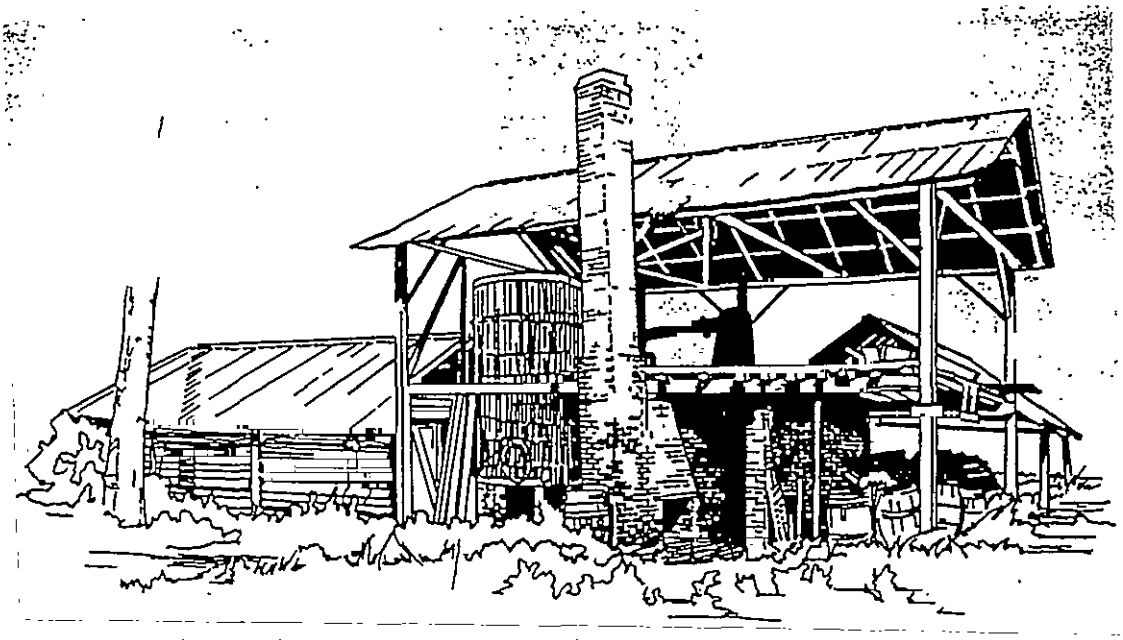

Figure 17. Typical twentieth century turpentine still (Thomas 1975:cover).

century turpentine still is shown in Figure 17. 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, southeast 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), 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). 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 Darian 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.

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 southwest 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 (Epeneshade 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 opened in 1911. The town eventually grew to include groceries, 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 Democrat 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 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 appraised 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.

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). The Red Cloud Alpha Range, a tank range which was surveyed during this project, was built in 1975 and is currently used today. 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 and record archaeological sites within the survey tract, which total 372.31 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).

Although surveys at Fort Stewart normally allow us to address a range of secondary goals, including research and methodological issues, the pedestrian survey methodologies, employed out of safety concerns, only permit us to engage in a discussion of secondary goals that address site location, function, duration, and chronology.

Each of the sites discovered represents some form of human occupation. This may range from a prehistoric hunting camp or seasonal occupation to a contact period frontier settlement, to a mid-twentieth century rural settlement. The study of recovered archaeological data provides a time frame for these sites, thus the temporal duration of these settlements. The functional purpose of these sites may become apparent from the study of tool assemblages or from personal items. They also offer the chance to determine changes in land use patterns over an extended period of time.

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 and record archaeological sites within the survey tract. Normally this is accomplished through the application of the criteria for eligibility for the National Register of Historic Places described by 36CFR60.4. Typically, archaeological sites are considered eligible based on Criterion D, because they "have yielded, or may be likely to yield, information important in prehistory or history." *National Register Bulletin* 36 (Townsend et al. 1993) provides an evaluative process that contains specific steps for forming a clearly defined explicit rationale for either the site's eligibility or lack of eligibility.

In this case, however, we do not attempt to assess these sites' eligibility because they 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).

One of the secondary goals we outline is to examine the location of both prehistoric and historic sites in relation to landforms, soil types, proximity to water, and soil drainage. Our goal in this effort is to simply add information to the current predictive model for Fort Stewart. We are not able to explore or address landform, soil, or drainage issues to settlement or provide comparative discussions on the expected range of site density for the Fort Stewart area. During these discussions, the reader should keep in mind that no subsurface testing was undertaken in this survey tract, limiting our ability to address such issues.

Another goal was to determine site function

and duration based on artifact content. Sassaman et al. (1990) have suggested that examining the tool to debitage ratio can provide functional information about a site. For instance, a low tool-debitage ratio will reflect either "locations of intensive lithic tool production, or locations were tools or cores were modified but not discarded" (Sassaman et al. 1990:224). A high tool-debitage ratio correspond to "relatively intensively utilized locations (e.g. field stations) away from bases and/or sources of lithic raw material" (Sassaman et al. 1990:224). Artifact density is also a method of examining site function since it reflects the "relative intensity of material discard at a site. By extension, the amount of discard is assumed to be proportional to the cumulative duration of site occupation and/or the total number of site occupants, and/or the intensity of activities from which discarded debris was generated" (Sassaman et al. 1990:223). Diversity of the assemblage can also measure the length of occupation since the discard rate of class one artifacts (such as hafted bifaces, pots, atlatls, etc.) is so low that all classes of artifacts will only be found together at sites with long occupational histories (Sassaman et al. 1990:224). This length of occupation can also be measured by the number of components present (Sassaman et al. 1990).

Density studies have also been helpful in determining site function and duration at historic sites. There has been an extensive amount of work done defining site function and duration during European contact, colonial, and post-colonial historic periods. Extensive studies, conducted at colonial plantation and settlement sites throughout South Carolina (Lewis 1984, 1985; South 1993; Ferguson and Babson n.d.; Trinkley et al. 1995) utilize ceramic typologies. European, Native American, and African American earthenwares answer questions related to the function and duration of these sites. Quite often, social status and position may be determined as well. Related land use studies may be enhanced by this data.

As well, the nature of Fort Stewart as an active military base has particularly affected the historic archaeological resources found there. A number of studies have been conducted at locations where military activity was instrumental in either the deposition or removal of cultural resources related to their operation (Legg and Smith 1989; Trinkley 1996, Trinkley et al. 1996). Initial archaeological studies at these sites tend to find a paucity of material. At Fort Stewart this is due to the removal of historic structures found on the base at the time of land acquisition by the United States government in the early 1940s, and regular policing of areas of military activities according to military regulations. At Fort Stewart, favored bivouac areas tend to be located where previous historic sites have been recovered. The lack of cultural materials at these sites may be related to ongoing activities by the military, personal collection of artifacts, and camp cleanup.

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.

Figure 18. Ordnance in the survey tract, view to the south.

Figure 19. Ordnance in the survey tract, view to the southeast.

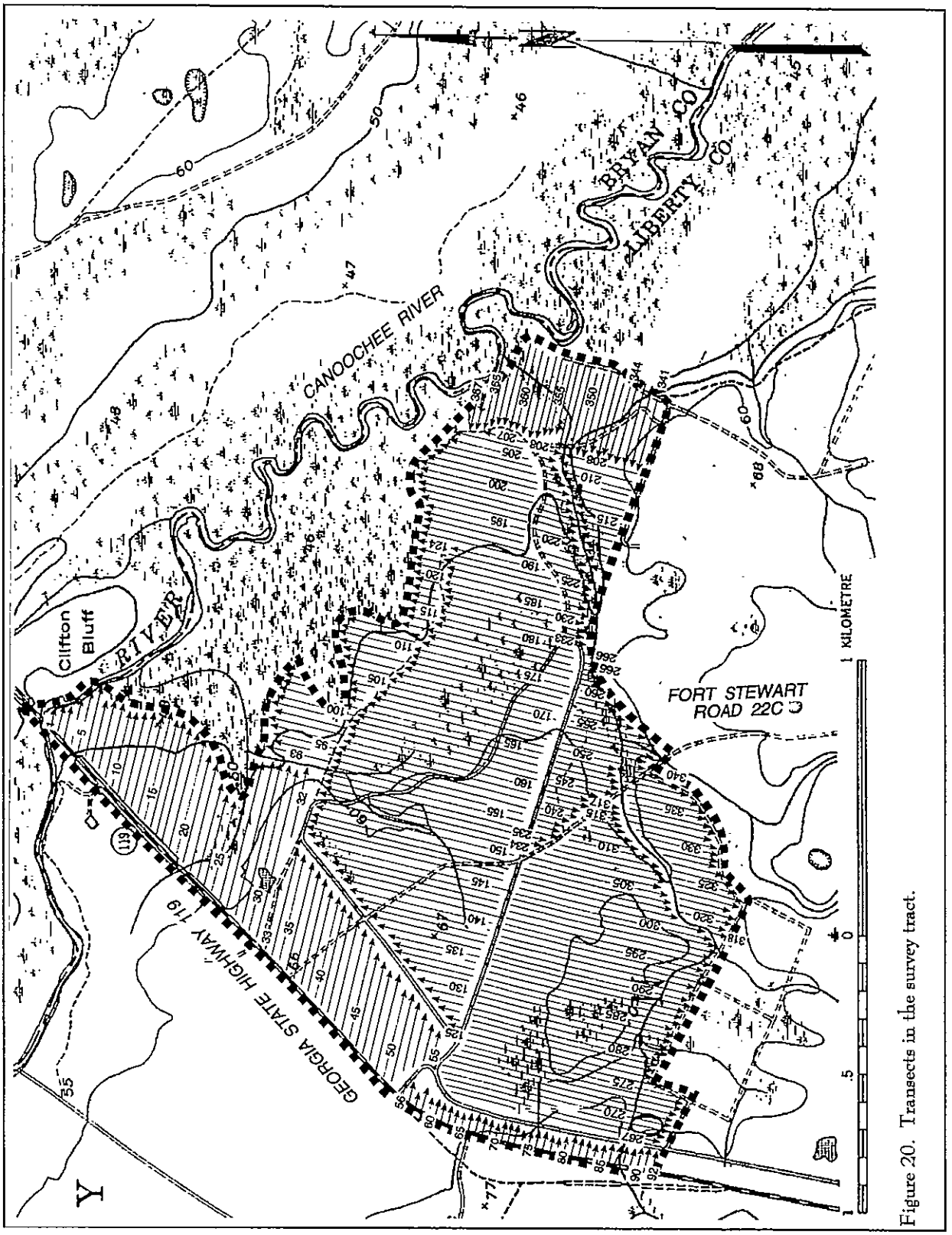

Figure 20. Transects in the survey tract.

Transects are laid out as specified by the scope of work using the standard interval. Shovel tests or, in the case of this 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 archaeological sites and occurrences were assigned state site numbers.

The presence of unexploded ordnance in the survey tract made it necessary for us to undertake only a pedestrian survey of the project area. Ordnance is scattered throughout the tract, both within Red Cloud Alpha Range and in the forested areas outside of the range, as is shown in Figures 18 and 19). 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 75% in areas of Red Cloud Alpha Range. Survey transects were plotted and numbered on a project field map. During the course of this project a total of 367 transects were traversed (Figure 20).

When artifacts or brick rubble were located, a surface collection was undertaken using a grid that incorporated 10 m or 20 m collection units. The southwest corner was consistently used to designate the grid location. Positive collection units were recorded on site maps in order to determine the surface boundaries of each site. In addition, the location of brick was also noted on these maps to help determine site boundaries. Field notes for positive surface collections, site notes, and site maps were also recorded. At each *site*, a sketch map was drawn to scale showing the locations of surface collection units, positive units, natural and man-made features, and the location at which GPS points were taken.

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.

Table 8.
UTM Coordinates for Sites in All Survey Tracts

	GPS		Map Interpolation	
Site	N	E	N	E
9LI733	3544651	438252	3544660	438250
9LI734	3544989	439781	3544980	439780
9LI735	3545127	439763	3545120	439760

GPS readings taken with SA active 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 other surveys undertaken on post, we did not encounter any problems with data collection during the survey of a portion of Training Area B-11 and the Red Cloud Alpha Range.

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 8 shows, the GPS coordinates are extremely close to the hand plotted coordinates. The location of two sites at intersecting roads and the end of a road shown on the USGS maps ensure that the hand plotted locations are the correct locations, allowing us to accurately compare the two coordinates for each site.

The reason for this improved level of GPS accuracy can possibly be attributed to the use of an antennae with an 18-foot extension capability. This may have eliminated problems previously encountered with 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 August 1999. 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.

Diagnostic projectile points were likewise compared to published type descriptions (such as Coe 1964 or Bullen 1975). Georgia has, however, borrowed heavily from neighboring states. Often the type descriptions are poor and frequently the materials are poorly recognized or duplicate types in other states. We have tried, where ever possible, to simplify rather than make more complex, the identification of points.

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 372.31 ha, encompassing Red Cloud Alpha Range, Training Area B11.3, and a portion of Training Area B11.5, consisted of two historic sites and one prehistoric isolated occurrence (Table 9).

All three sites are recommended as ineligible for the National Register. Fort Stewart has determined that it is too dangerous for personnel to do subsurface testing or data recovery in areas of unexploded ordnance and the Georgia State Historic Preservation Division has concurred that "the information that makes [a] 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). The size, component, quad map, artifact number, and eligibility recommendations for each site are shown in Table 9.

Table 9.
Archaeological Sites in Survey Tracts

Site	Component	Size	Artifact #	Quad Map	Eligibility
9LI733	Historic site	10,800 m²	107	Willie	IE
9LI734	Historic site	2,800 m²	71	Willie	IE
9LI735	Isolated find	1 m²	1	Willie	IE

IE=ineligible

Sites Recorded in the Survey Tract

Three cultural resources were located during a pedestrian survey of the tract. These sites include two historic sites, 9LI733 and 9LI734, and an isolated prehistoric find, 9LI735. Find 9LI735 is located in the northern portion of the tract just south of the Canoochee River. Site 9LI733 is located in the southern portion of the site at the intersection of Fort Stewart Road 22C and an unnamed dirt road. Site 9LI734 is located at the end of an unnamed dirt road near the Canoochee River (Figure 21).

9LI733

Site 9LI733 is a historic scatter measuring 120 m by 120 (Figure 22). The site is located at the intersection of Fort Stewart Road 22C and an unnamed dirt road that runs roughly east west from Bravo Range. The central GPS UTM coordinates are N3544651 E438252 and the elevation is 18 meters above mean sea level (AMSL).

Investigation of the site was based on the surface observation of a mound of bricks visible from the unnamed dirt road. No structural remnants were found in conjunction with the brick. A total of 146 10 m by 10 m surface collection units were examined. Of these, 10 were positive, producing 23 artifacts. Twenty-two of the units contained brick fragments. Artifacts occur on both sides of the road and in the road (Figure 22).

North of the unnamed dirt road, we noticed two small earthworks associated with the remains of military vehicles (Figure 23). Further investigation of the areas surrounding the site indicated that there were a number of military vehicle parts scattered throughout the area, probably related to the nearby Bravo range. The area has obviously been used as part of training exercises, affecting the integrity of the site.

Of the 23 artifacts recovered from the surface of the site, only three are clearly dateable. One of these

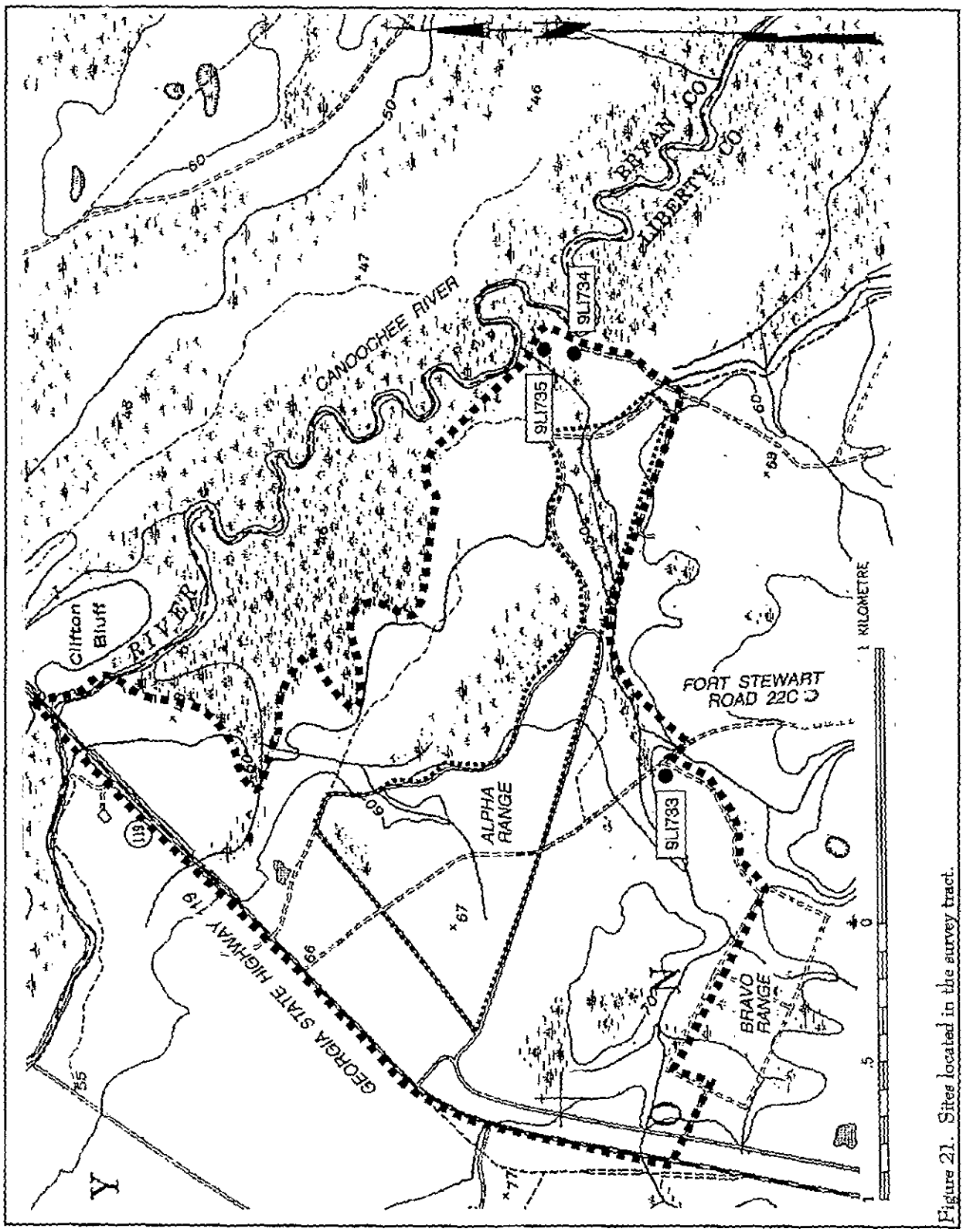

Figure 21. Sites located in the survey tract.

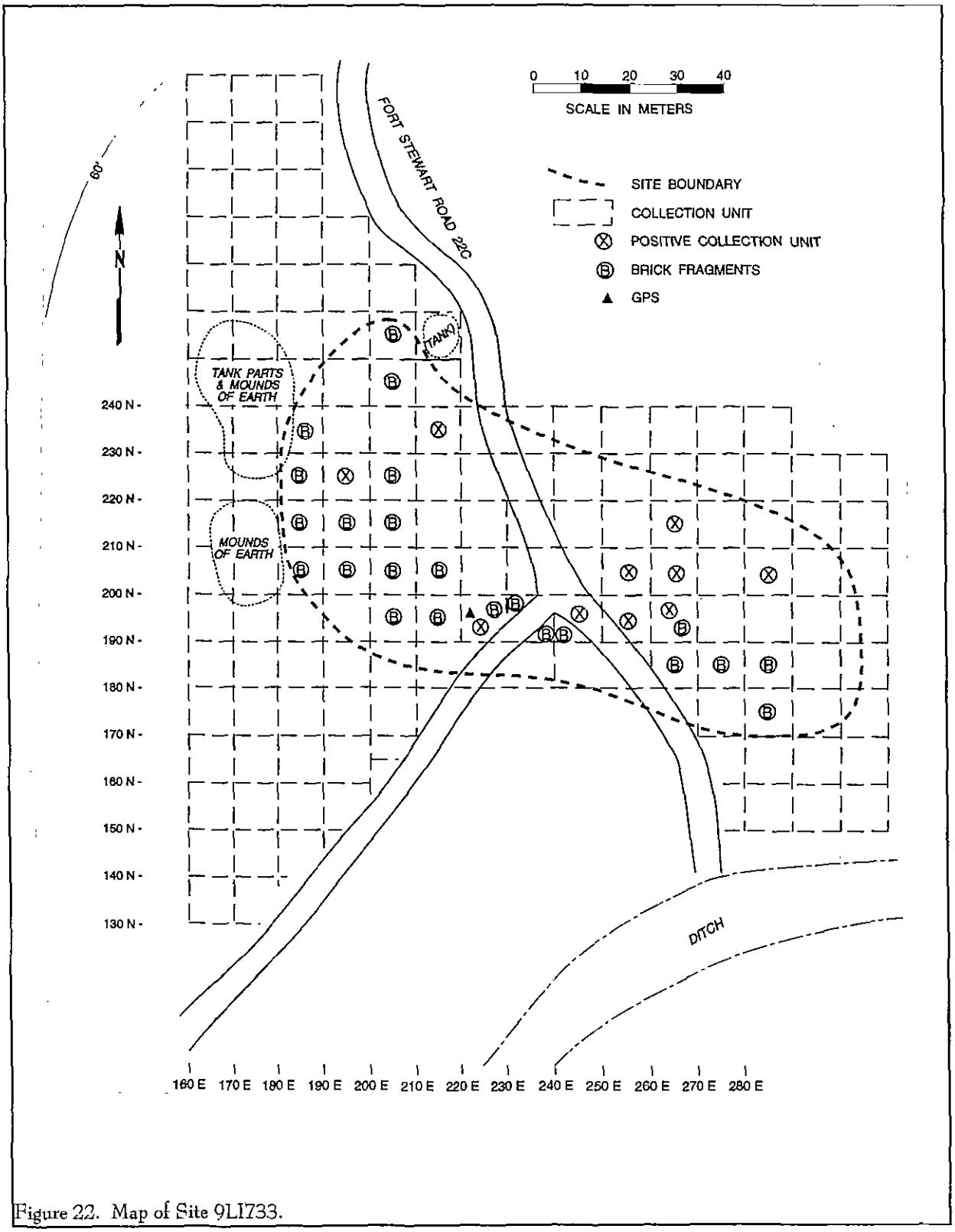

Figure 22. Map of Site 9LI733.

Table 10.
Artifacts Recovered from Site 9LI733

Prov.	Blue	Manganese	Clear	Brown	Lt Green	Am.*	Whiteware	Stoneware	Miscellaneous
N190 E230	1								
N190 E250		1					2		
N190 E260			1						
N190 E270									2 flat thin iron
N200 E260			1						
N200 E270			7						
N200 E290								3	
N210 E200				2	1				
N210 E270						1			
N230 E220									1 "tin" can lid
Total	1	1	9	2	1	1	2	3	3 (23)

*Amethyst

artifacts is a clear glass fragment with a maker's mark that is attributed to the Owens Illinois Glass Company of Toledo, Ohio. This firm was formed in 1929 and operated until 1966 (Toulouse 1971:403). This particular mark indicates that the bottle was manufactured from 1929-1954, suggesting that the site was occupied until after 1929. Two whiteware fragments also suggest the site was occupied in the late nineteenth to early twentieth century, when whiteware was produced. The two whiteware fragments only provide general dates and can not provide chronological control for the site. Other artifacts recovered from the

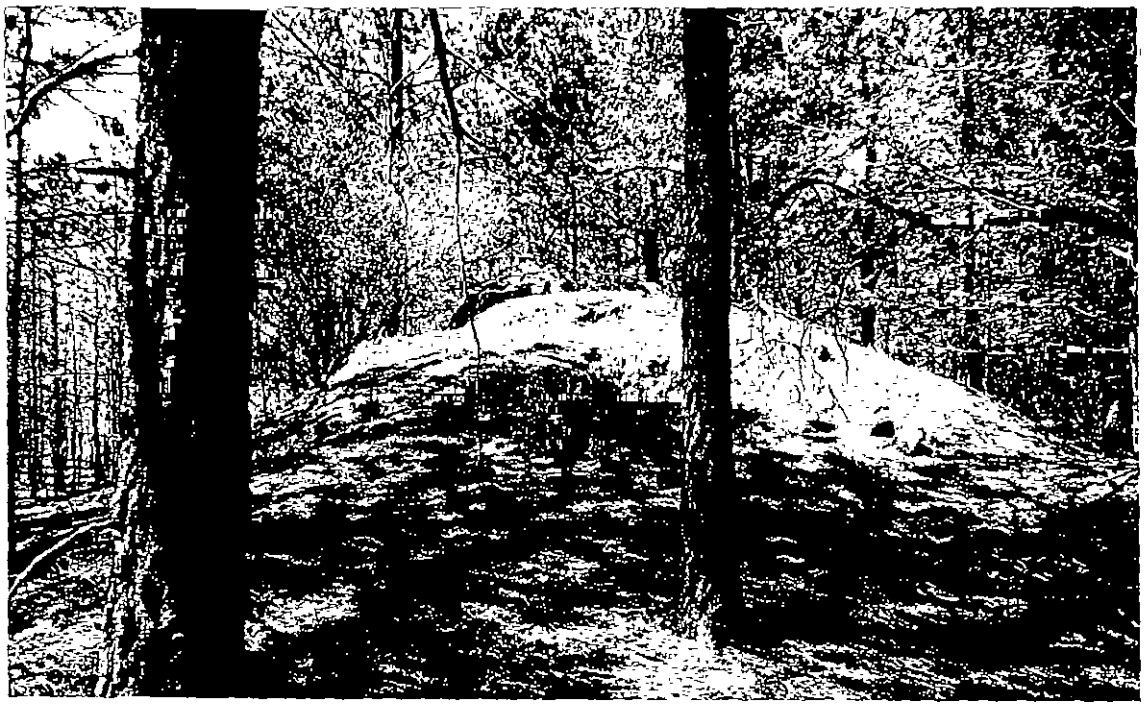

Figure 23. Military refuse at 9LI733, view to the north.

Figure 24. Seasonal swamp north of 9LI734 and 9LI735, view to the north.

surface are listed in Table 10. Bristol glaze stoneware fragments with a 9-inch rim diameter and a "tin" can lid with a 2⅝-inch diameter suggest that this site may represent a domestic site.

As has been noted, subsurface testing could not be undertaken in this survey tract due to the presence of unexploded ordnance in the area. For this reason, the subsurface conditions of the soils cannot be addressed. However, we can determine, based on soil maps, that 9LI733 is located on Johnston and Bibb soils. These soils generally have high water tables and are poorly and very poorly drained.

As we have mentioned, Fort Stewart has already determined that sites located in the survey tract are recommended as ineligible for the National Register of Historic Places. For this reason, the eligibility assessment issues that we would normally address, such as the site's data sets, the site's context, important research questions that the site *may* be able to address, and the evaluation of the site's archaeological integrity, will not be reviewed in detail. Nevertheless, site 9LI733 is recommended as ineligible for the National Register based on the surface survey and available collection.

9LI734

Site 9LI734 is a historic scatter located near the Canoochee River at the northeastern corner of the survey tract. The site was located while the survey boundaries were being examined with the consulting archaeologist. At this time, we completed a small general surface collection of artifacts. Later, an intensive surface collection was undertaken. The site is located 250 m west of the Canoochee River. The GPS UTM coordinates are N3544357 E439781. The elevation at 9LI734 is 15 m AMSL.

The vegetation at 9LI734 includes large oaks, mixed hardwoods, and pines. Approximately 60 m north of the site, the topography changes to a seasonal swamp located just south of the Canoochee River (Figure 24). The vegetation also changes with a more dense scrub underbrush and cypress trees appearing in the swamp area. The swamp contained both waterlogged and dry areas, with vegetation in dry areas exhibiting water lines. The topography is highest in the

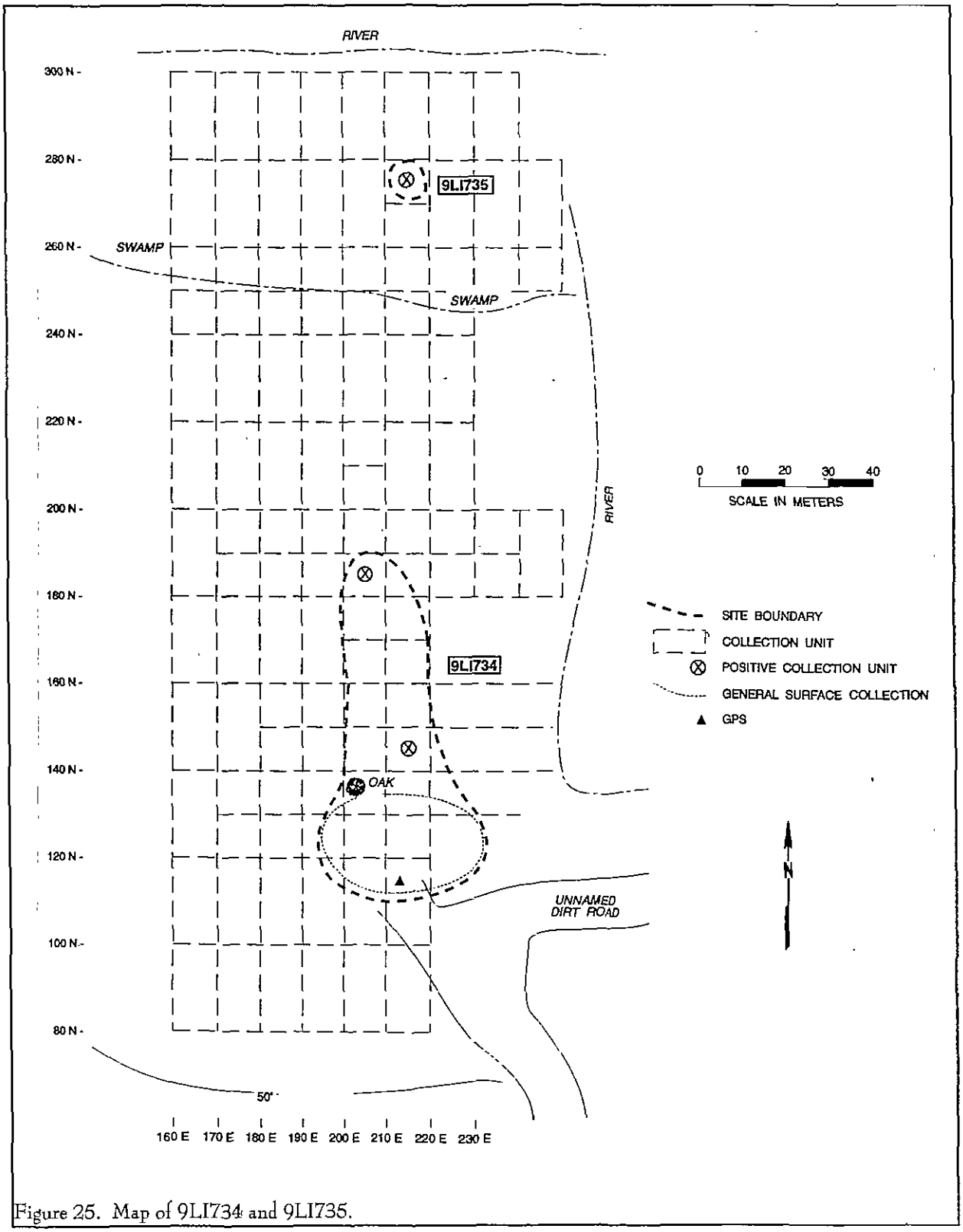

Figure 25. Map of 9LI734 and 9LI735.

area where the site is located. It slopes north, northeast, and west toward the Canoochee River and a creek located west of the site. We also noted a large number of ordnance in this area.

An intensive surface collection consisting of 10 m by 10 m units and 20 m by 10 m units was used to determine the site's surface boundaries, which measure 80 m by 30 m (Figure 25). Normally, Collection Unit N180 E210 would have been designated as a separate site under site definitions provided in the scope of work. However, we noticed that the artifact from N180 E210 mended with an artifact from N140 E210, indicating that N180 E210 was indeed part of 9LI734. Surface visibility in the area ranged from no visibility of the ground to 75% visibility. Two positive units produced seven artifacts, including three green glass fragments, and four manganese glass fragments. All of the green glass mend together and represent the base and part of the body of a soda bottle. The base is embossed with "HINESVILLE/GA PAT. DES. NO. 70281." The bottle's body, which has a crown cap, is embossed with "SODA WATER/BOTTLING CO. CON. 6 FL. O(Z)" and "(SODA WAT)ER/( )A-COLA." Crown caps post date 1895, placing the occupation of the site in the late nineteenth to early twentieth century. Artifacts recovered from the general surface collection include two albany slip stoneware fragments, four manganese glass fragments, and a stamped tin aspirin container lid, measuring 1⅞-inch by 1¼-inch. These artifacts suggest that the site may have served a domestic function, although the data from the site is too sparse to determine the site's function with absolute certainty.

The site is located on Pelham loamy sand , a poorly drained soil that is flooded briefly in winter and has a high water table (Looper 1982:32). In general, Pelham soils have up to 64 cm of A horizon, overlying a B horizon of sandy loam and sandy clay loam.

Due to the presence of unexploded ordnance in the survey tract, no subsurface testing was undertaken at the site. In concurrence with Fort Stewart, and based on the surface survey and available collections, 9LI734 is recommended as not eligible for inclusion on the National Register of Historic Places.

9LI735

Find 9LI735 is an isolated Savannah River point. It was located during the intensive surface collection for 9LI734. Find 9LI735 is located 90 m north of Site 9LI734 in a swampy floodplain approximately 30 m south of the Canoochee River (see Figure 25). The central GPS UTM coordinates are N3545127 E439763. The elevation is 15 m AMSL. Field technicians noted that the point was located in an area that appeared to have recently been disturbed by an animal.

The chert Savannah River stemmed point appears to have been used to exhaustion (Figure 26). The point measures 40.6 mm in length and 40.1 mm in width. The stem width is 24.1 mm and the thickness is 10.2 mm. Savannah River stemmed points date to the Late Archaic period.

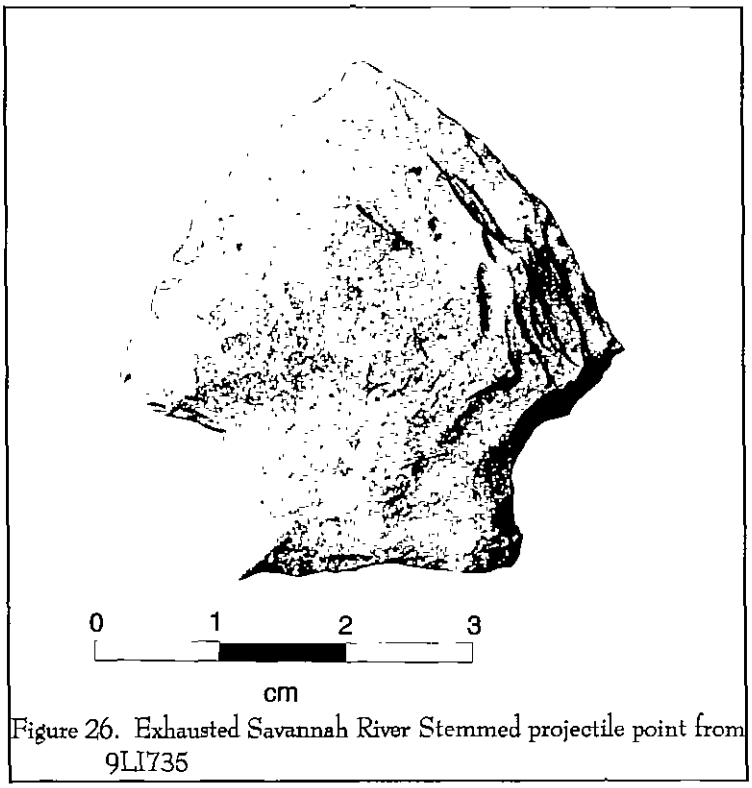

Figure 26. Exhausted Savannah River Stemmed projectile point from 9LI735

9LI735 is located on Osier and Bibb soils, which make up about 5% of the total soils on the tract. These soils, which are common on flood plains, are poorly drained and frequently flooded during the winter and spring (Looper 1982:32).

The presence of unexploded ordnance on the survey tract prohibits subsurface testing and Fort Stewart has determined that sites in these areas have inaccessible data, making the sites ineligible for inclusion on the National Register. Consequently, 9LI735 is recommended not eligible.

CONCLUSIONS

Introduction

As a result of the pedestrian survey of the 372.31 ha in survey tracts encompassing Red Cloud Alpha Range, NRMU B11.3 and a portion of NRMU B11.5, two historic sites and an isolated find were identified. All three sites are recommended as not eligible for inclusion on the National Register. The presence of unexploded ordnance on the survey tract prohibits subsurface testing, and the Georgia State Historic Preservation Division has determined that sites in these areas have inaccessible data, therefore making the sites ineligible for 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 has been learned concerning the cultural phases present in the study area.

Historic Maps for the Survey Tract

The Pembroke 1920 USGS quad map was examined in order to determine which structures shown on the maps should be present in the field. The survey tract was overlaid on the 1920 map, with our best efforts made to match land forms, such as creeks, the river, and roads. Georgia State Highway 119 is not shown on the 1920 map, which made the task of imposing the survey tract onto the 1920 map very difficult. The resulting map, Figure 27, should not be considered an exact match between the two maps, but a close approximation. Structures within the survey tract are highlighted with arrows and the one identified structure (shown on this map) is marked with its site number.

Two historic sites were located during the survey. One of these, Site 9LI733, can be matched with a structure shown on the 1920 Pembroke map (Figure 27). Site 9LI734 does not have a corresponding structure shown on the 1920 map.

An additional three historic structures are shown on the 1920 map that were not located during the pedestrian survey in spite of extra vigilance by the field crew. Two of these structures appear to be located in the immediate vicinity of Red Cloud Alpha Range. By 1950, the Pembroke USGS quad shows no structures in the area of the survey tract (Figure 28). However, a few roads that are shown on both the 1920 Pembroke map and the Willie 1958PR73 map are not shown on the 1950 Pembroke map. This suggests that the 1950 map may not have recorded as much detail as the 1920 or 1958PR73 maps.

There are two possible reasons for the low expression of these historic sites located during the survey. The first most obvious reason is that a pedestrian survey will only locate sites with visible surface remains in an area with good ground visibility. Surface visibility in this tract was generally far less than 50%, with a dense leaf litter covering the ground. Any sites that may have been recognized through artifact surface scatters would not have been visible under these conditions of poor ground visibility. Attempts were made to be especially aware of surface artifacts and brick rubble in areas with large oaks or pecan trees, which are often a good indication of historic sites. The second reason these sites were not located may be due to the use of the area by the U.S. Army from the time it acquired this property to the present day. In general, when land was acquired, many of the buildings were razed, destroying above ground features. The construction of the Red Cloud Alpha Range in 1975 probably necessitated further clearing of the area. Military training in the area may also have damaged any archaeological sites in the area.

As previous studies have suggested (Campo et al. 1999a, 1999b), historic sites are likely to be found along roads. This holds true for structures shown on the historic maps for this survey tract. Likewise,

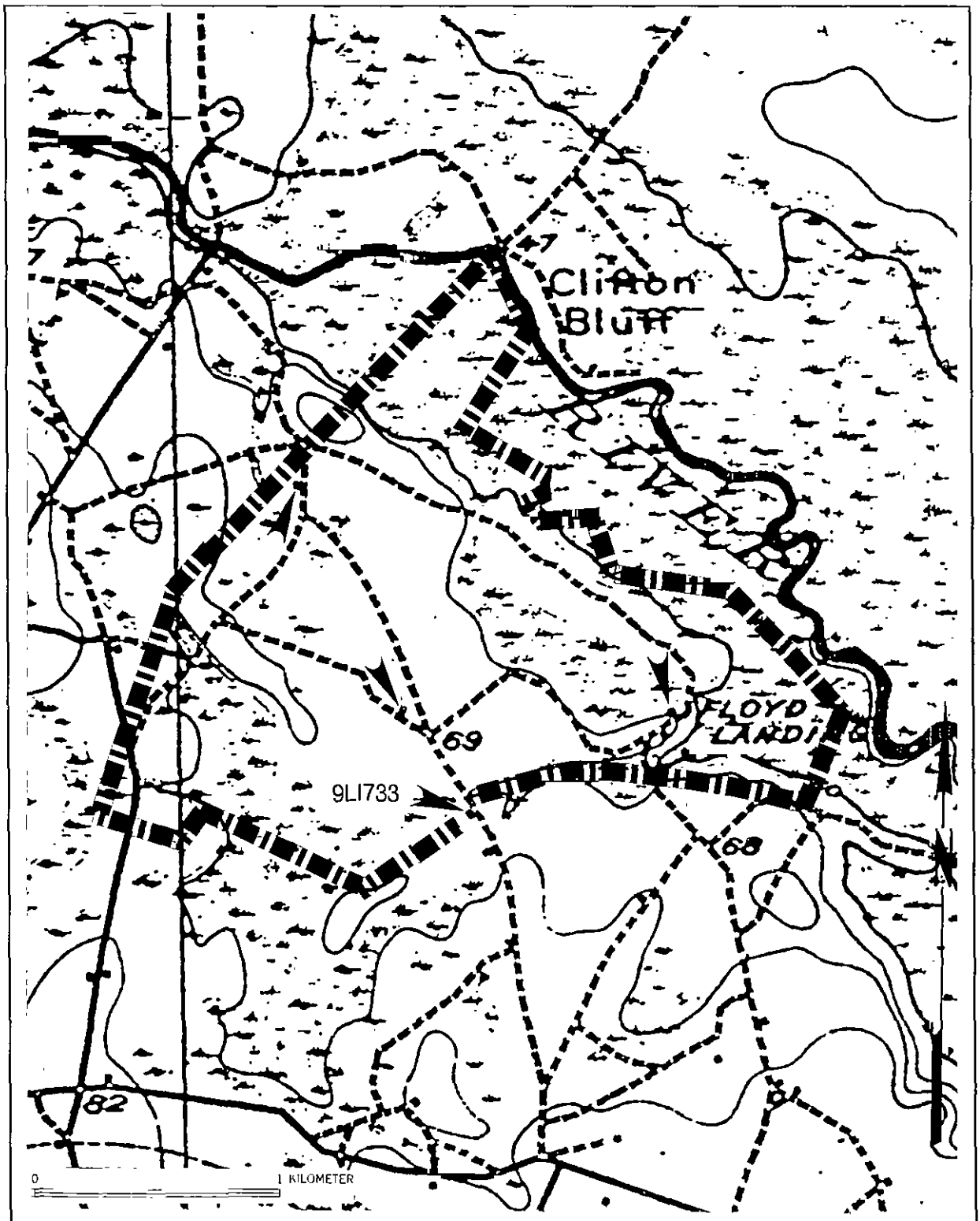

Figure 27. Historic sites and structures shown in approximate survey tract (base map is Pembroke 1920).

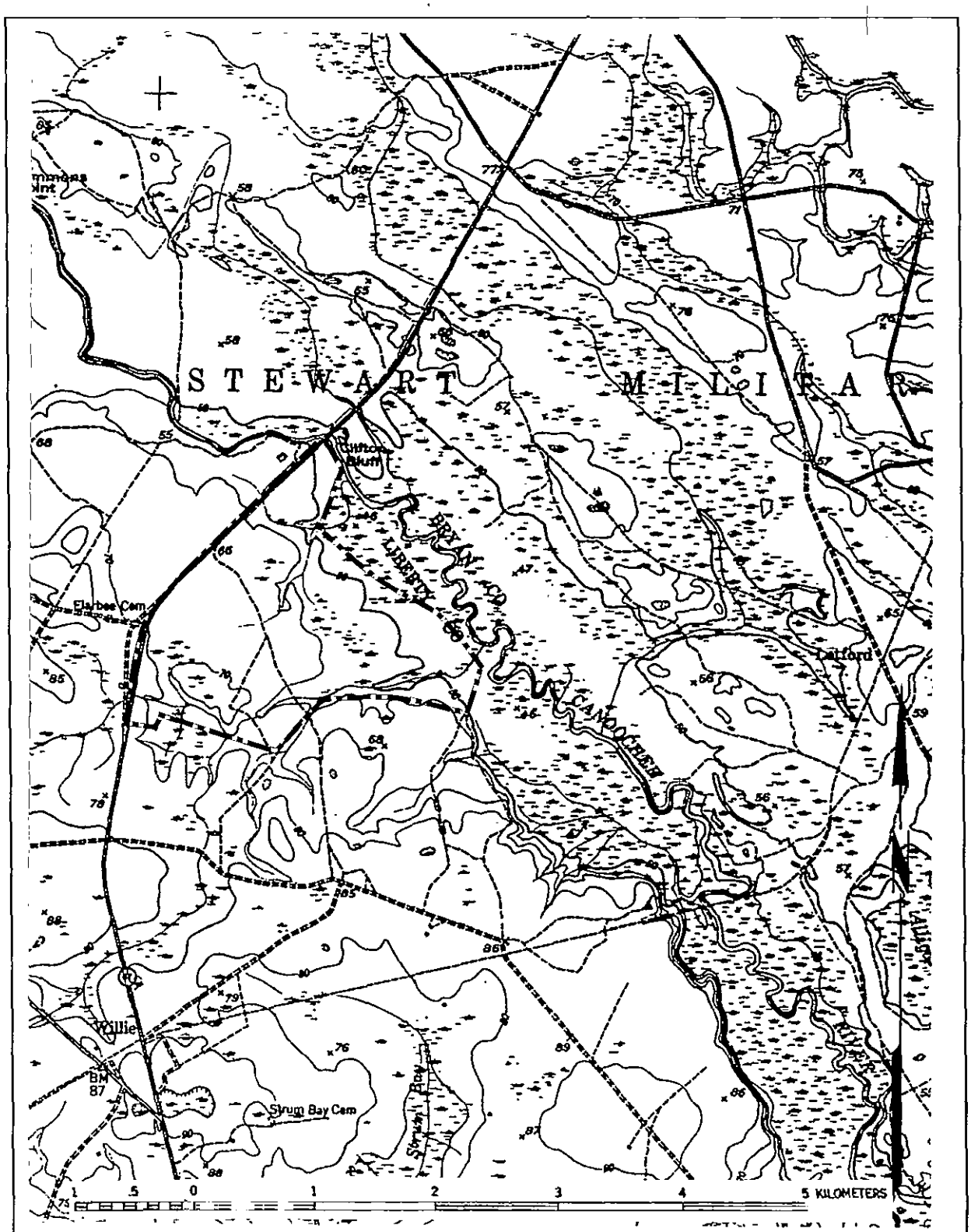

Figure 28. Approximate location of survey tract on USGS Pembroke 1950 map.

previous surveys conducted by Chicora have also found that historic structures shown on historic maps along highways, well maintained roads, and areas actively used for military training are less likely to be preserved than those located on roads that are not maintained. The current survey also supports this finding.

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. 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 pedestrian survey undertaken limits our interpretations of the current predictive model. Without subsurface testing, any comparison between site locations and soil probabilities would be ineffectual. For this reason, this discussion is limited to a descriptive purpose only in the hopes that this information will help further refine the current predictive model. During this survey, two historic sites and an isolated prehistoric find were located. Site 9LI733 is located on Johnston and Bibb soils, a poorly drained soil, making up 23% of the total soils on the tract. Site 9LI734, a historic site, is located on Chipley sand, a moderately well drained soil that makes up 7% of the total soils on the survey tract. Find 9LI735 is located on Osier and Bibb soils, which make up 5% of the total soils on the tract.

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 historic sites located during the survey were found in an area that was 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 site locations are more complex than the current model suggests.

Site Density

The survey tract is located in the northern portion of Fort Stewart, along Georgia State Highway 119. Three sites were located and recorded during this pedestrian survey, yielding a site density of 0.81 sites per km^2. This is lower than the average for the previous

Chicora survey (Campo et al. 1999b:104), which had a site density of 1.13 km^2 for three survey tracts. The most logical and obvious reason for this low site density is the difference in methodologies: the previous survey tracts were intensively shovel tested and the current survey tract was pedestrian surveyed, limiting the recovery of archaeological sites.

Overview of the Fort Stewart Chronology

One of the questions raised in the overview of the regional prehistoric chronologies was whether the Fort Stewart area was closely tied to the chronology proposed for the mouth of the Savannah River, or if the chronology suggested by more interior locations, such as the Ocmulgee Big Bend area, might be more appropriate. Unfortunately, the data are too sparse to permit even any tentative stabs at answering this question.

Although in previous studies (Trinkley et al. 1996a) it was found that there seem to be aspects of both coastal and interior coastal plain cultures present on Fort Stewart, the present study found only one isolated prehistoric occurrence, providing too little data to infer that any prehistoric occupation occurred in these tracts. The one prehistoric find dates to the Late Archaic period and was located in the flood plain of the Canoochee River.

Historic occupation of the post is found in the form of dispersed settlements and small communities. The two historic sites located during this survey, 9LI733 and 9LI734, both date to the late nineteenth and early twentieth century. Site 9LI733 may represent a historic domestics site, although the data is too sparse to decisively interpret this site. Far fewer artifacts were located at Site 9LI734, and with no supporting data from the historic map for the area, we are unable to assign a function to this site.

These interpretations are necessarily brief and descriptive, based only on a pedestrian survey of the tract. The presence of unexploded ordnance prevents any subsurface testing of the project area, limiting the archaeological information that can be obtained from these three sites.

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APPENDIX 1.
CATALOG OF RECOVERED MATERIALS

Acc #	Box #	Bag	County	Site	Contractor	Project	Prov.	Artifacts	Date	Catalog
054	2	1	Liberty	9LI733	Chicora	Fort Stewart 11	S N190E230	1 blue glass	8-20-99	DH
054	1	2	Liberty	9LI733	Chicora	Fort Stewart 11	S N190E250	2 whiteware, undecorated	8-20-99	DH
054	2	2	Liberty	9LI733	Chicora	Fort Stewart 11	S N190E250	1 manganese glass	8-20-99	DH
054	2	3	Liberty	9LI733	Chicora	Fort Stewart 11	S N190E260	1 clear glass	8-20-99	DH
054	2	4	Liberty	9LI733	Chicora	Fort Stewart 11	S N190E270	2 flat, thin iron fragments	8-20-99	DH
054	2	5	Liberty	9LI733	Chicora	Fort Stewart 11	S N200E260	1 clear glass	8-20-99	DH
054	1	6	Liberty	9LI733	Chicora	Fort Stewart 11	S N200E270	7 clear glass with maker's mark	8-20-99	DH
054	1	7	Liberty	9LI733	Chicora	Fort Stewart 11	S N200E290	3 stoneware, bristol glaze	8-20-99	DH
054	2	8	Liberty	9LI733	Chicora	Fort Stewart 11	S N210E200	2 brown glass	8-20-99	DH
054	2	8	Liberty	9LI733	Chicora	Fort Stewart 11	S N210E200	1 light green glass	8-20-99	DH
054	2	9	Liberty	9LI733	Chicora	Fort Stewart 11	S N210E270	1 purple glass	8-20-99	DH
054	2	10	Liberty	9LI733	Chicora	Fort Stewart 11	S N230E220	1 "tin" can lid	8-20-99	DH
054	1	11	Liberty	9LI734	Chicora	Fort Stewart 11	S General	2 stoneware, albany slip	8-20-99	DH
054	2	11	Liberty	9LI734	Chicora	Fort Stewart 11	S General	4 manganese glass	8-20-99	DH
054	2	11	Liberty	9LI734	Chicora	Fort Stewart 11	S General	1 stamped tin lid	8-20-99	DH
054	1	12	Liberty	9LI734	Chicora	Fort Stewart 11	S N140E210	2 green glass	8-20-99	DH
054	2	13	Liberty	9LI734	Chicora	Fort Stewart 11	S N140E220	4 manganese glass	8-20-99	DH
054	1	14	Liberty	9LI734	Chicora	Fort Stewart 11	S N180E210	1 green glass	8-20-99	DH
054	1	15	Liberty	9LI735	Chicora	Fort Stewart 11	S N260E220	1 exhausted chert Savannah River point	8-20-99	DH

ABOUT THE AUTHORS

Rachel Campo received her undergraduate degree in Anthropology from Louisiana State University in 1995 and her MA in Anthropology from the University of South Carolina in 1997. Since that time she has worked with Chicora Foundation, where she is now Senior Research Archaeologist. Ms. Campo has been accepted for membership in the Register of Professional Archaeologists. She has served as the field director on a number of data recovery projects at both historic and prehistoric sites, primarily along the South Carolina coast. She has also been responsible for both large and small scale cultural resource management surveys in South Carolina, North Carolina, and Georgia.

Michael Trinkley received his undergraduate training at the University of South Carolina and a doctorate in anthropology from the University of North Carolina at Chapel Hill. He served as the senior staff archaeologist with the S.C. Department of Highways and Public Transportation before joining the foundation in 1983. Dr. Trinkley is a noted expert in both prehistoric and plantation period archaeology. He has worked at a variety of sites throughout South Carolina, including a number along South Carolina's coast and inland as far as Greenville. He has also conducted research at sites in neighboring North Carolina, Tennessee, and Virginia. He is a member of the Register of Professional Archaeologists.

Debi Hacker received her undergraduate training at Tulane University and served as an Archaeologist and Laboratory Supervisor at The Charleston Museum, before joining the S.C. State Museum as their Conservation Administrator in 1987. In 1990 she joined Chicora Foundation, where she is responsible for laboratory processing, analysis, and conservation. Ms. Hacker has worked on collections from a wide variety of prehistoric and historic archaeological sites from throughout South and North Carolina, Georgia, and Tennessee.