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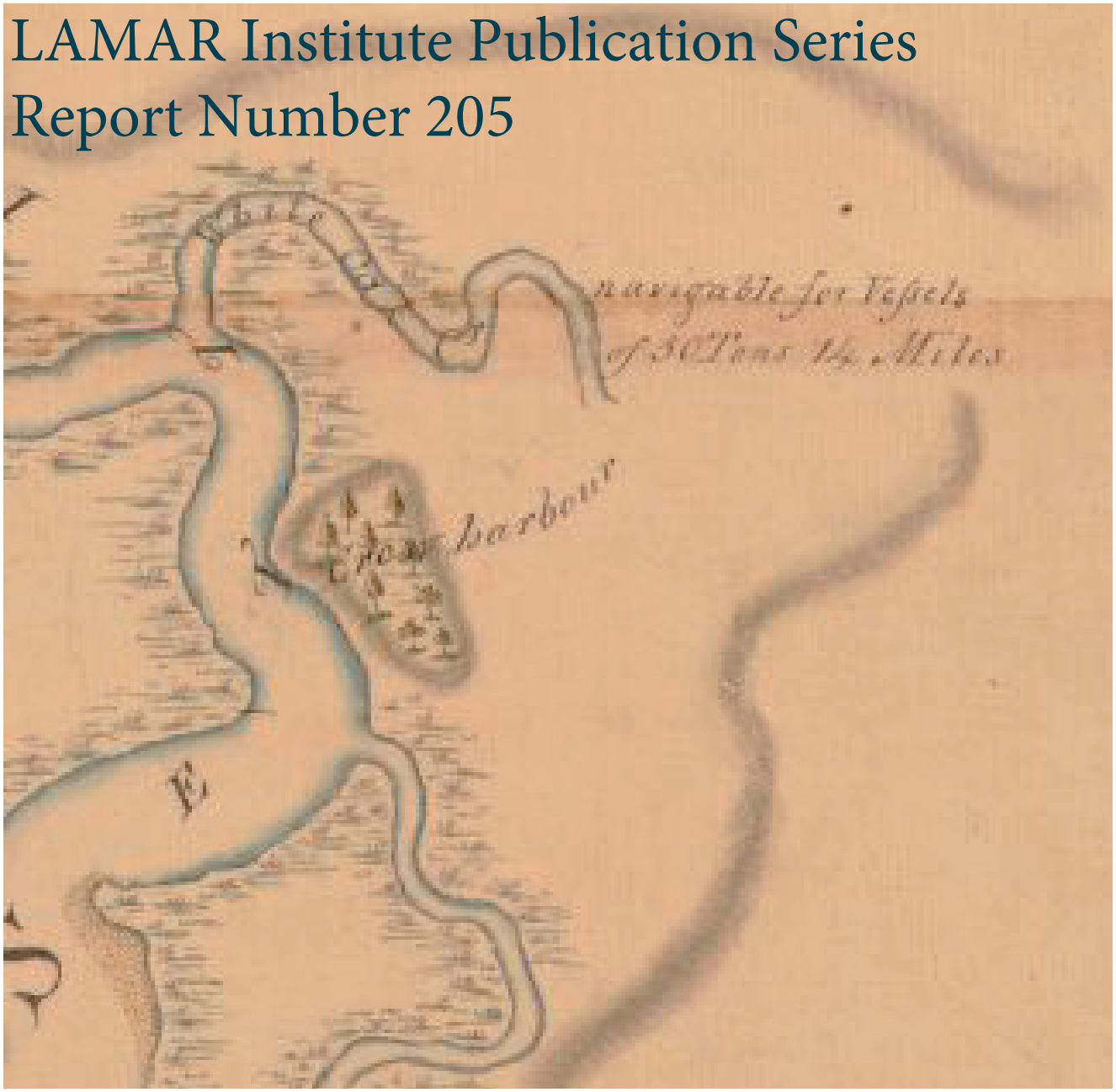

Submerged Sites of Camden County, Georgia
Document Research and Underwater Survey Plan

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August 2006

I. Camden County

Establishment and Location

Camden County is Georgia's southeastern most county, separated from Florida on the south only by the St. Marys River. Today the county is bordered on the east by the Atlantic Ocean, on the north by Glynn County, and on the west by Charlton County. The county lies 84 miles south southwest of the city of Savannah and 36 miles north of Jacksonville, Florida. Camden County measures 783 square miles (USGS 2006). As late as 1977, the population of Camden County totaled only 11,334 (USDA 1980:1). Today the population of the county has increased dramatically to 43,664 (Georgia.gov).

Camden County was created on February 5, 1777. Its namesake was the Earl of Camden, Sir Charles Pratt, who supported American colonial rights in spite of his standing as Chief Justice and Lord Chancellor of England (USGS 2006). While the county was not created until 1777, the area was organized 12 years earlier as Saint Thomas and St. Mary parishes (USFS 2006).

Camden County was one of eight original counties created in Georgia in 1777. Parts of the county were later divided to create Charlton and Wayne counties (USDA 1980:2).

Major settlements consisted of St. Marys, Kingsland, and Woodbine. Kingsland was incorporated in 1908. Woodbine is the county seat and was incorporated on August 13, 1908. Its establishment was a result of the Savannah and Western Railroad line. Other communities sprung up throughout the county including Browntown, Burnt Fort, Colesburg, Dover Bluff, Ella Park, Harrietts Bluff, Horse Stamp, Jefferson, Jerusalem, Kinlaw, Spring Bluff, Waverly, White Oak, and Tarboro (Redick 1976:1). Some of these are depicted in Figure 1 and Figure 2. Many of these small communities such as Waverly, Tarboro, and White Oak are unincorporated. Other settlements, such as Jefferson/Jeffersonton and Coleraine, played key roles in the history of the area.

Figure 1. Camden County in 1895 (Rand McNally 1895).

Figure 2. Camden County in 1915 (Hudgins 1915).

The town of Jeffersonton was also depicted in historical documents as Jefferson (Figure 3 and Figure 4). Jefferson was the seat of Camden County for a time. A two story courthouse in the town is depicted on an 1830 plat (Figure 5). The plat is an impressive compilation of early Camden County activity. The town of Jefferson is clearly delineated. It is connected to St. Marys, to the Satilla River, and to Colerain by post roads.

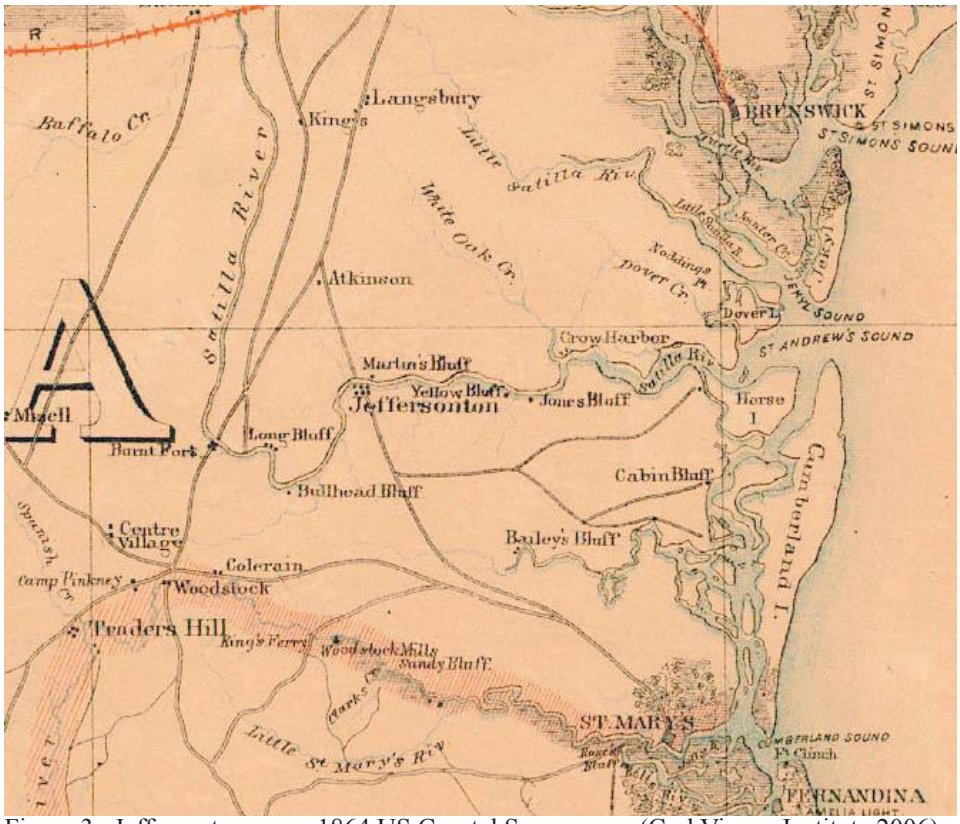

Figure 3. Jeffersonton on an 1864 US Coastal Survey map (Carl Vinson Institute 2006).

Colerain was one of the earliest economic, military, and social hubs in Camden County's early history. It appears on early maps, including a 1799 map that shows the vast "Nation of Indians" to the west and the area immediately west and adjacent of the county, "As claimed by the State of Georgia previous to the Treaty of New York" (n.a. Georgia 1799). The only other places on the map in or near the county were the settlements of St. Marys and St. Patricks. Clearly Colerain, on the St. Marys River at the edge of the county, was on the frontier. As such, it served as a significant U.S. Army and

Georgia militia post, and factory for the deerskin trade with Native Americans. Its location enabled Colerain to utilize the St. Marys River for trade, vessel traffic, wharves and boat landings, to name a few of the activities. As a plantation, Coleraine thrived. The 1830 plat mentioned above depicts Colerain with a main plantation house, five outbuildings, and six slave houses in a quarter (CCSC Deed Record A&B, Bk B:11). The river was a focal point throughout the early 20th century, as the boat landing served a variety of vessels. WWI found the landing used for unloading material used in gunpowder manufacture from rail carts into vessels.

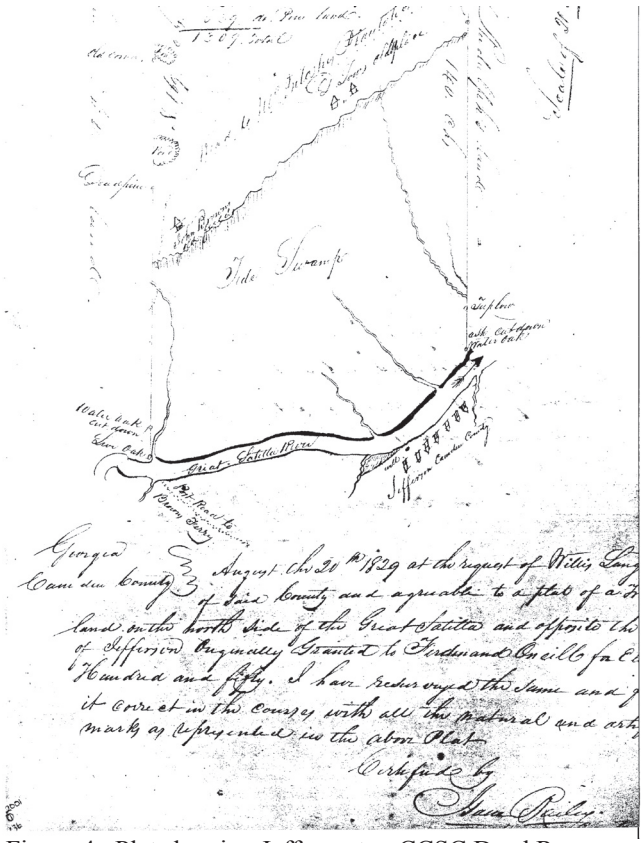

Figure 4. Plat showing Jeffersonton CCSC Deed Record A&B, BK B9.

Burnt Fort's original name was New Hanover, as listed on a map by Edmund Gray in the 1750s. By the 1790s New Hanover consisted of a district of military blockhouses and earthworks. Burnt Fort also had an "Indian Store" or trading post (Figure 5). These were destroyed by fire in and the town became known as Burnt Fort after this time (Barefoot 2001:64). A sawmill was established there in the 1830s and the turpentine

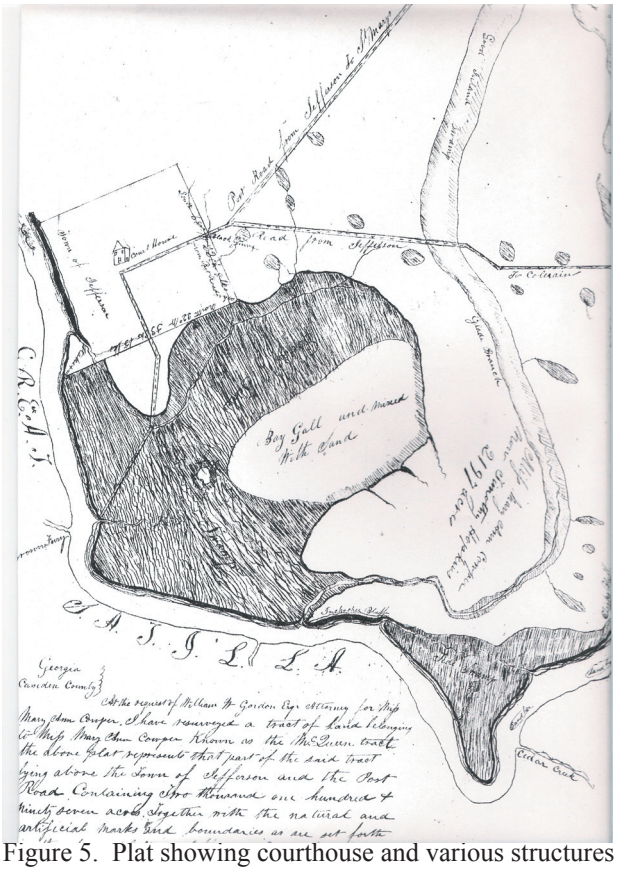

Figure 5. Plat showing courthouse and various structures (CCSC Deed Record A&B, Bk B:11).

industry gained a foothold here in the beginning of the 1900s (Barefoot 2001:64). Kingsland is on the route of the Old Dixie Highway constructed in 1912 and running from Maine to Miami (Barefoot 2001:47). Woodbine was established in 1908 on a 15-block grid pattern. Woodbine

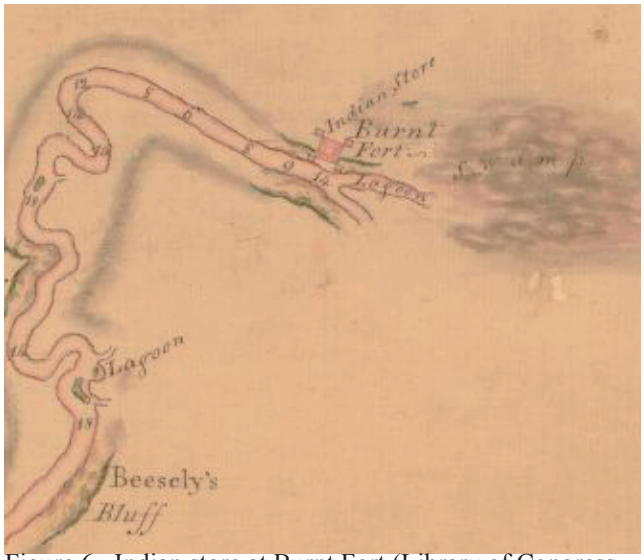

Figure 6. Indian store at Burnt Fort (Library of Congress 178-).

owes its birth to the railroad. In 1923 its growing importance as a railroad town contributed to the relocation of the county seat to Woodbine from the town of St. Marys (Barefoot 2001:56). By 1977 Woodbine's population totaled just over 1,000 (USDA 1980:1).

St. Marys was established in 1787 as a planned town consisting of a regular grid of streets and lots (Reddick 1976). The town was located on the St. Marys River, twelve miles west of a main sandbar located at the mouth of the St. Marys Inlet on the Atlantic Ocean (Bullard 1983:26) (Figure 7). St. Marys, therefore, was established as a river port. During the Spanish colonization of Florida, the town of St. Marys was located only six miles from Spanish Fernandina and separated from Spanish Florida only by the river. By 1837 St Marys was reputed to have 1,000 occupants (Arnow 1955b:23). A visitor to St. Marys during that time reported that, "At no seaport south of Charlestown can all kinds of merchandise be bought as cheap as this place; her merchants making annual visits to New York from whence they obtain their supplies" (Arnow 1955b:23). In 1837 St. Marys boasted a well-supplied market of fish, oysters, vegetables, eggs, chickens, and other items.

Figure 7. St. Mary in 1796 (Morse 1796).

Geography/Geology

The geology and geography of the area played an important role in the formation and resulting use of the area by man. The geology most readily impacted early man sites by contributing factors deemed favorable or not for land use, and by creating events that impacted site locations and environments and site preservation. These geologic factors also contribute heavily to the ability to predict current locations of prehistoric sites, whether they were once dry and are now submerged sites, or they are located in an unexpected area based on modern topography. The geographic factors influenced land use for both prehistoric and historic people.

Geologically, Camden County experienced radical changes during the Quaternary Period due to its location next to the Atlantic Ocean. A total of five Shoreline Complexes left their mark on the county. Each complex resulted from fluctuating sea levels caused by severe climate changes.

The complexes, from oldest to youngest and from highest to lowest elevation, include Talbot, Pamlico, Princess Ann, Silver Bluff, and Holocene (USDA 1980:3). The Talbot Shoreline Complex was deposited first at an elevation of 35-45 feet above mean sea level (msl). It is located in the western part of the county. The old post road follows the location of this complex, undoubtedly because of the benefits of its greater elevation. The second oldest complex is the Pamlico, deposited at 15-35 feet above msl. Its sandy and clayey deposits cover most of the county. At 10 to 15 feet above msl, The Princess Ann Shoreline Complex is identified as low upland ridges lying west of the salt marsh. The

poorer definition of this complex suggests that the associated sea level did not remain at this level for an extended period. The Silver Bluff Shoreline Complex is the second to youngest of the five complexes. It is thought to be 25,000-36,000 years old. The Silver Bluff Complex lies at 6-10 feet above msl and includes portions of the barrier islands, salt marshes, and intra-coastal flats. The most recent complex is the Holocene, which is thought to have been deposited 4,000 to 5,000 years ago. The Holocene Complex lies on the seaward side of Little Cumberland and other barrier islands (USDA 1980:3).

The geographic attributes of the area include the location of the St. Marys River and its outlet to the Atlantic Ocean (Figure 8). The geography of Camden County includes inlets, a harbor, barrier islands, marshes, all of which influenced the history of the area. These features and the adjacent harbor were natural attractions historically for the development of the port of St. Marys. The St. Marys inlet was not readily visible, navigated, or exited during the 18th and early 19th centuries. The inlet was naturally guarded by the ever-shifting sands of three sand bars. One sandbar by the St. Marys harbor was reportedly easily navigable in 1837 by vessels drawing up to 17 feet of water and leaving a 3 foot clearance (cited in Arnow 1955b:23) Other reports about the various sandbars near the St. Marys inlet were less optimistic. Captains tried to navigate these more challenging bars by following changing channels indicated by treacherous breakers. Pilots from Georgia, Florida, and Bermuda were often hired solely to navigate vessels into the St. Marys inlet, after which time ship captains could choose to sail to St. Marys or to Fernandina along a marsh channel separating the two cities located on the St. Marys River (Bullard 1983:26).

Cumberland Harbor was located between one quarter and one half mile off the Cumberland Island shore, southwest of Dungeness. In fact, Dungeness provided a visible topographic feature surrounded by a relatively flat coastline (Bullard 19883:26). This harbor was known as providing good anchorage for vessels because it had a mud and sand bottom, was large enough for sailing vessels to maneuver in the wind in order to turn around, and generally consisted of two to seven fathoms of water (Bullard 1983:27).

The geography also influenced historic settlement. The western portion of the county is level Flatwood with underlying hardpan. The eastern portion of the county contains the level and poorly drained landscape includes estuaries and saltwater marshes. The nearby barrier islands contain the higher elevations of the area,

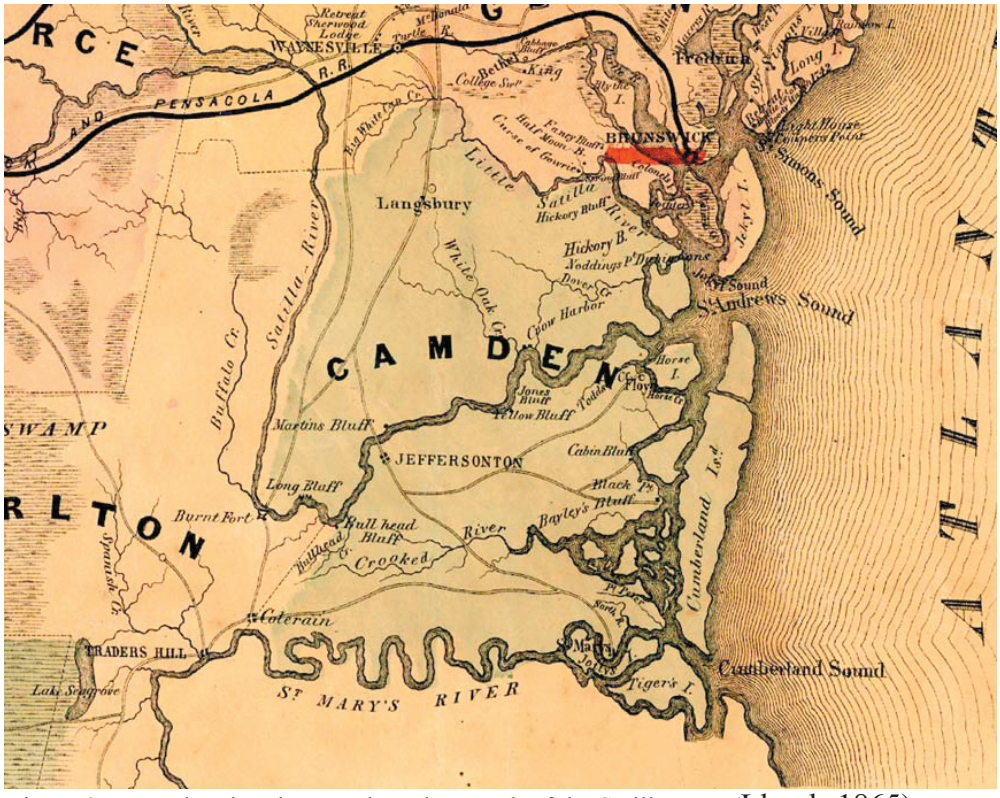

Figure 8. Map showing the sounds at the mouth of the Satilla Rver (Lloyds 1865).

which includes sloping ridge tops and irregular dunes (USDA 1980:1). The marshy lowlands on the eastern portion of the county and the higher bluffs along waterways and on coastal islands led to the settlement of the area for rice and Sea Island cotton plantations.

Waterways

The major rivers of Camden County are the St. Marys, Cumberland, Crooked, Big Satilla, and Little Satilla (Reddick 1976:1). The county has numerous smaller named and unnamed tributaries. The aquatic environments of the county are abundant and varied (Figure 9). Historically flooding has occurred in Camden County. Flooding occurs most often in low lying areas and floodplains of rivers and creeks. Unprecedented flooding has occurred in higher elevation areas, however, such as during the freshet of 1928, which flooded the settlement of Burnt Fort. The settlement was located on a bluff at an elevation of 30-40 ft. above the Satilla River (Barefoot 2001:97).

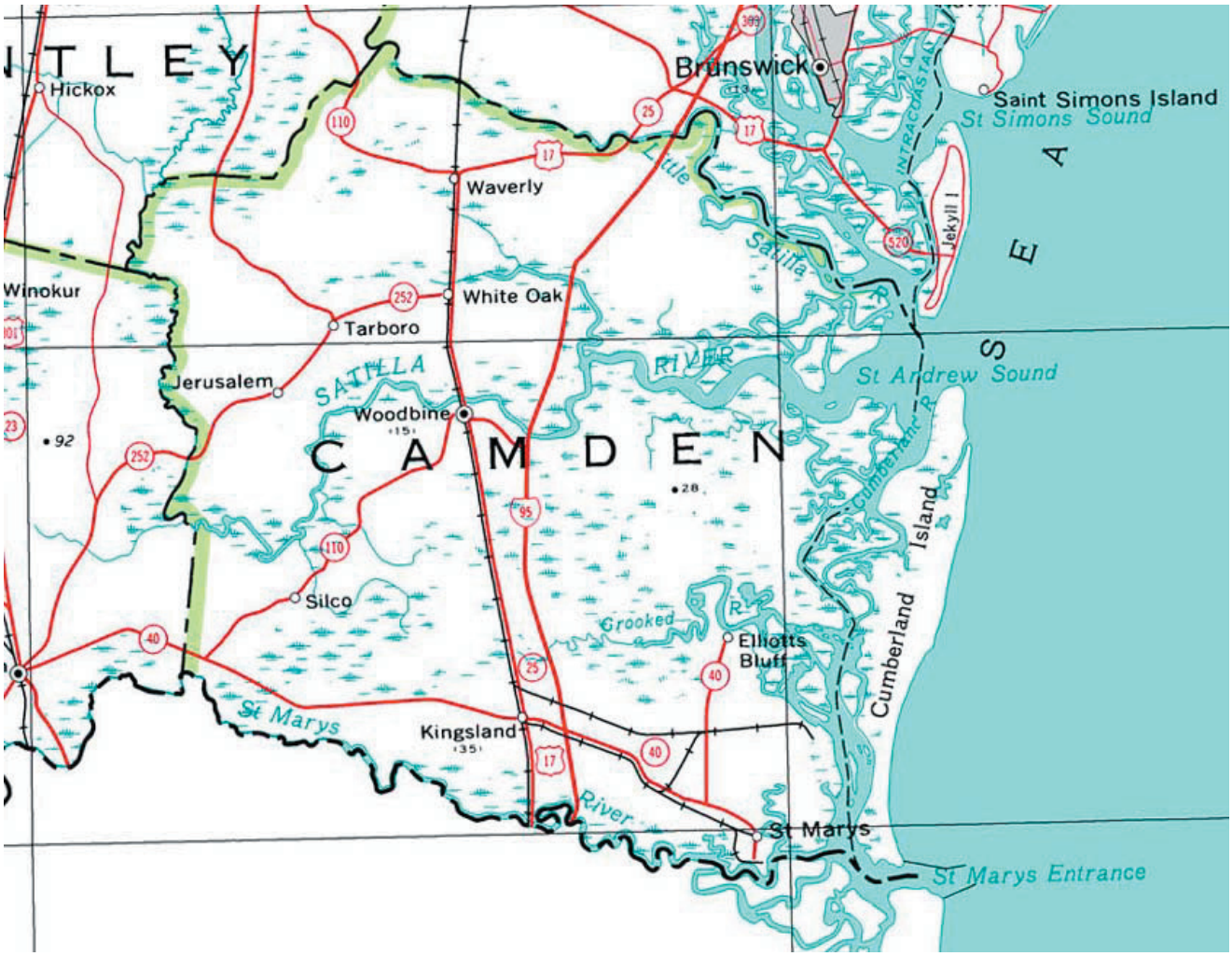

Figure 9. This modern map shows the aquatic nature of Camden County (USGS 2001).

II. Methodology

The submerged/inundated sites portion of this report consists entirely of historical research. No ground-truthing was used to determine if sites located in the documentary record exist in the archaeological record. The section below details the repositories visited and the materials researchers examined.

Repositories and Relevant Holdings

Georgia Historical Society, Savannah, Georgia
The researcher visited the Georgia Historical Society (GHS) and examined the manuscript and map holdings for material relevant to Camden County and items related to underwater sites. Initial review of the subject card catalog for the manuscript collection looked promising, however, and examination of the individual manuscript collection indices revealed that most "Camden County" listings were not linked to potential sites in the project parameters. They are included below as an aid to future researchers of Camden County.

Listings for "Camden County" in the Manuscript subject catalog resulted in the examination of the finding aids for the following manuscripts, which revealed these specific topics:

Edith Duncan Johnston Papers [1881-1962] MS 433
- Cemetery at Mariana, Camden County. Mentioned in a letter from Beatrice Long (Box1, Folder 2)
- Notes on Plantations on Coast of Georgia, including Camden, some photos (Box 4, Folder 1, 2)

Hughes Folsom Papers [1753-1951] MS 406
- Surveys and Notes, Camden County (Box 1, Folder 10, Items 144-158)
- Certified copies of warrants for land sur veys 1753-1816 (Box 2, Folder 16)

Marmaduke Hamilton and Delores Boisfeuillet Floyd Papers [1562-1970] MS 1308
- Minutes & Papers of the Camden Hunt Club 1832-1836 (Box 21, Folder 213)

- Grave inscriptions in Camden County, in Letter from Lucian Lamar Knight Box 6, Folder 60).

Mary Faith Wilson Collection [1816-1830; 1872-74; 1990-1994] MS 1588
- Sword of General Charles Rinaldo Floyd (1797-1845); from part of his armory, which was located on his Camden County plantation

Gordon Family Papers MS 318 Add.1
- Camden County Land Records. Plats and abstracts for Ambrose Gordon. (Folder 36)

Colonial Dames of America, Georgia Society, Historical Collection [1641, 1730-1971] MS 965
- Camden County Land/Legal documents. Josiah Tatnell Paper. Trust deed Tatnell to Wm Stephens et al tract on Crooked River, March 1, 1803. (Box 12, Folder 142)

The researcher then examined the map holdings of the Georgia Historical Society. Copies were made, when allowed by the repository, of relevant maps. Maps with relevant information included the following:

- Georgia 1730-1850. This contemporary (20th century) map is a recreation of Georgia from 1730-1850 by scholar John Goff. (#56 GA Georgia. 6-G6)

- Georgia 1799. Map showing county names and boundaries, some Creek and Cherokee towns, and trading posts and roads. (#257 GA Georgia. 6-E-2. Re-engraving of Wheat and Brun 1795 map, I. Low, NY)

- Georgia 1812. Delineates Creek Indian country, Mississippi Territory and exist ing roads. (#259 GA Georgia. 6-E-2. by Saml Lewis, 1812, Boston)

- Camden County 1953. General highway map showing cemeteries, settlements, and ferries. (#106 GCCL. 3-H-7)

- Camden County, Baillie Tract. Prop erty of Robert Baillie and Alexander Bail lie. (#110 GCCL. 3-G-7. by Issiah Canty and Phillip Yonge, 1774)

- Camden County, Guerard Tract. Prop erty of John B. Guerard. Shows rice dams, fields, mansion, etc. (#117 GCCL. 3-H-7. by Wm Hughes, County Surveyor of Liberty County, Aug. 16, 1851)

- Camden County, Ivanhoe Plantation. Property of Col. George W. Owens. Ex tremely fragile map, showing rice ca nals, dams, dikes, steam mill, mansions, etc. on Great Satilla River. (#120 GCCL. 3-H-7. by Wm Hughes, 1849). The GHS would not allow this map to be copied. The researcher drew a not-to-scale sketch of a portion of it for reference.

- Camden County, Marianna Tract. Estate of John H. McIntosh. (#121 GCCL. 3-H-7. by Luther Marin, 1856).

- Georgia 1849. Bonners Map…with Geo logical Features. (#393 GA Georgia. 3-H-12. by W.T. Williams, Savannah, 1849).

- Georgia 1943. Georgia Transportation Map. Shows highways, railroads, canals, dredged canals. (#406 GA Georgia. 3-H-12. by U.S. Geologic Survey).

Researchers examined other Georgia and Camden County maps at the Georgia Historical Society as listed below, to name a few. These provided few relevant details.

- Georgia [ca. 1660] Map of Spanish Mis sions in Georgia and Carolina, post 1661. (#401 GA Georgia. 3-G-11).

- Georgia [1763]. A Map of Georgia and Florida. (#233 SS Georgia. 6-G-8. by Thomas Wright).

- Georgia 1780. The Coast, Rivers, and In lets of the Province of Georgia. (#61 GA Georgia. 3-H-5. surveyed by Joseph Av ery).

- Georgia [1827]. Georgia. Geographical, Statistical and Historical Map. (#71 Georgia. 6-G-6. by F. Lucas Jr.).

- Georgia 1833. Mitchell's Travel Guide. Roads, Distances, Steamboat and Canal Routes. (#541 NA. 3-G-12).

- Georgia 1839. Roads, Distances, etc. (#54 GA. 6-G-12. by H.S. Tanner).

- Georgia, Coast of Southeastern United States 1842. (#330 NM. 3-H-10. by Wm Hooker).

- Georgia 1881. New Map of the State of Georgia. (#92 GA. 3-G-7. by Henry S. Stebbins).

Some maps contained pertinent information to this project. Unfortunately, the fees of the Georgia Historical Society at $40.00 for each image used in a report such as this, in addition to the copy fees charged, precluded the inclusion of the multiple maps and other documents that would have been helpful to the reader of this document.

Georgia Department of Archives and History, Morrow, Georgia (GDAH)

The on-line holdings of the GDAH were searched in addition to a visit to the Morrow facility. Attention was focused on maps and photo-

graphs relevant to site types being investigated in this study.

Two 19th century maps of Camden County were located at GDAH (White 1868 and Froebel 1869). Each map showed important cultural features in Camden County, which are no longer extant. Digital versions of both maps are available online at the GDAH VirtualVault.

Live Oak Regional Libraries, Bull Street Location, Savannah, Georgia
Research undertaken by Dan and Rita Elliott at the Bull Street Library location in Savannah uncovered a variety of secondary Camden County histories and transcriptions of county documents. These included useful sources such as History of St. Marys and Camden County, Vol. I and II (Arnow 1955), Black Liberation on Cumberland Island in 1815 (Bullard 1983), St. Marys and Camden County (Barefoot 2001), and Shipwrecks of South Carolina (containing Spence's List) (Spence 1984). Other sources that were examined but did not provide any relevant information about potential submerged sites included Camden County Georgia Cemeteries (Durbin 1993) and History of Camden County (Vocelle 1914).

Library of Congress (online)
Library of Congress' map holdings were searched on-line for map sources and other items related to Camden County submerged sites. Researchers located an unattributed map of the Camden County vicinity, which date to sometime between 1781-1789. Items on this map depict numerous natural and cultural features, including many plantations and settlements that are no longer extant. The document was entitled, "Map of the Coast of Georgia Bordering on Camden and Glynn Counties, Showing also the Course and Soundings of the Altamaha, Turtle, Crooked, St. Mary's, Great Satilla, and Little Satilla Rivers" and located under "Georgia Maps-Early Works to 1800", Camden County, Geography and Map Division (http://memory.loc.gov/cgi-bin/query). National Archives and Records Administration (online Federal and Regional Morrow, Georgia holdings).

The National Archives and Records Administration (NARA)
The National Archives and Records Administration (NARA) holdings were searched through its online (www.archives.gov/preservation/technical/guidelines.html) catalogues and scanned documents. These included "Records of the Bureau of Marine Inspection and Navigation 1774-1973 (Record Group 41). This record group includes Steamboat Inspection Service Records and Navigation Records. Neither the former nor latter contained any listings for Camden County. The latter did have a listing for "Brunswick, Georgia" 1869-1913, under "Field Records of Bureau of Navigation". This document was not among those scanned and available on line. Research examined the Wreck Reports in the U.S. Customs Service Collector of Customs records. There were no listings for the port of St. Marys. Dan Elliott visited the regional repository in Morrow, Georgia. The U.S. Customs Finding Aids were examined and nothing relevant was located. The Wreck Reports were studied and there were no listings at that repository for the ports of Savannah, Brunswick, or St. Marys.

Camden County Repositories
Bryan-Lang Historical Library
Researchers Dan and Rita Elliott examined the holdings of the Bryan-Lang Historical Library in Woodbine, Georgia and were assisted by the Library Director. This facility holds some original deeds, plats and other Camden County court records, which are not duplicated at the Camden County Courthouse. The library also has unbound primary documents, copies of primary documents, and secondary source materials such as county histories and clippings in vertical files.

Plat books examined included Camden County Land Grants (Misc.) 1786-1794 which had been transcribed to Book AB. No water features were noted in these plats. Researchers studied Camden County Land Plats Book C 1791-1794 and

noted one useful plat detailing a saw mill on Mill Creek. Items of note here also include The Camden County Field Notes 1796-1816, which is a bound volume of plats from that period that was not observed at the Camden County Courthouse.

Another noteworthy item is the wreck registry. Copies of three pages of this registry are located in the Camden County History vertical files in a folder labeled, "St. Marys: Port-Wreck Report". These three pages appear to have originated in a Wreck Report book maintained by the Customs Collector. The location of the remainder of the book is unknown. A check of the Georgia Department of Archives and History and the regional repository of the Federal archives revealed wreck book for Charleston and other ports, but not for St. Marys. The reports detail information about ships that wrecked. The information includes the vessel name, nationality, tonnage, age, port of registry, disembarking port, port of destiny, number of passengers and crew, value of vessel and cargo, type of cargo, estimated damage to vessel or cargo, locality of casualty, nature and cause of casualty, assistance rendered, remarks, and etc.

The Camden County Courthouse, Woodbine, Georgia

The Elliotts also studied the plats and maps in the Superior Court, in the Camden County Courthouse at Woodbine, Georgia. They studied the early Camden County deed books from 1765-1824, looking for plats embedded with the deeds. These included Deed Books AB, BC (Pt I and II), D, E, F, G, H (Pt. I and II), I and K. They located multiple plats, with several containing references to submerged and near-water sites.

Researchers looked through the two plat books, Survey Book G, and Deed Record A&B ("Headrights Plat Bk A&B 1785-1849), containing only plat records. These books included additional drawings of near and underwater sites in various parts of the county. Researchers made copies of the pertinent plats and these are included in the report below. A search of the records in Plat Cabinet 3, Files 1-8 dating from 1922-1947 revealed no water-related features.

Researchers examined the various rolled maps located on top of the bookshelves in the Superior Court Deed Records Room. They were not allowed to copy these, but made notes about relevant details. Maps studied included USACOE topographic maps for St. Marys, Georgia (1919); Cumberland Island, Georgia (1918a); and Bladen, Florida (1918b). A poor quality blueprint copy of the Map of Camden County, Georgia (King 1918) demarcated numerous ferries, including Burnt Fort Ferry on the Satilla River; Kings Ferry on the St. Marys River; Mills Ferry on the Satilla River below Buffalo Creek; and an illegibly marked ferry on the Satilla River.

Other relevant resources were noted on a copy of the Map of the Refuge Plantation, Camden County Georgia (Harrell 1905). These included the National Highway crossing the Great Satilla River noted on the map as "Ferry Here". This was located upstream from the Seaboard Atlantic Railroad drawbridge in Woodbine. The map also indicated the location of a rice threshing mill on Hopewell Bluff.

Georgia Archaeological Site File (GASF) (Athens)

The researcher examined the holdings of the Georgia Archaeological Site File (GASF) through the NARHGIS database accessible online by password. This includes the latest GASF database of recorded archaeological sites.

Research consisted of several steps, the first being the most obvious searches of the Camden County records, looking for sites coded as "submerged" or "flooded" under the "Preservation State" category. This search revealed only one site, that of 9CM23, which is a wharf on Cumberland Island. The spartan results of this search, one out of 276 sites, suggests that underwater, submerged, or sites eroding into water were not being adequately represented completely by this coding.

A second search was made of the database using the "Site Type" category and entering a variety of site type choices. The following site type selections revealed no results: barge, boat yard, causeway, corn mill, cotton gin, dam, grist mill, fish weir, historic Indian or rock dam, man made levee, mill dam, mill race, prehistoric channel, prehistoric fish weir/rock dam, rice mill, rice paddy, river ferry, saw mill, sea wall, ship or boat, sluice box, spring, spring box, tannery, textile mill, trading post, water tank/trough, and waterworks. The site type "canal or ditch" resulted in one record, that of site 9CM291. The terms "fort or battery", which would traditionally be sites located on water edges and possibly associated with water, returned the following matches: 9CM89 (a colonial fort eroding into the marsh); 9CM112 (Ft. William); 9CM113 (Ft. St. Andrew); 9CM242 (Pt. Peter); and 9CM244 (Pt. Peter Bank). The term "jetty" uncovered site 9CM110 (Cumberland jetty). Two sites were located under the term "mill pond". These included 9CM108 (Plum Orchard Pond) and 9CM109 (Ashley Pond). A similar term, "mill, unspecified" returned site 9CM222 (associated with Jim Bailey's mill) and 9CM224 (Jim Bailey's mill). A search of "ship or boat" found the oyster sloop of site 9CM239. A search using the sub-category "pier landings, pilings, dock" found site 9CM237, the Cumberland wharf, which was previously located under the heading of "submerged".

The combined searches under "Preservation State" and "Site Type" revealed only a total of 13 of the 276 sites recorded in Camden County. Clearly this method of site file search, based not only on the way the site forms are completed by archaeologists and others, but on the later impact of the environment on site topography and preservation, was not conducive to locating all the sites falling in the category of this present study. For this reason, the researcher made a third search of the site file data for Camden County.

A third search entailed calling up all archaeological sites plotted on the Camden County map in the database. The researcher then "zoomed in" on each site dot symbol that was apparently near a creek, river, marsh, inlet, ocean, or other body of water. If the enlarged version indicated that the site was adjacent to such a body of water, then the researcher examined the site file form for that particular site to ascertain if the site was indeed water-related, submerged, or eroding out of a bank or other terrestrial landform and into a body of water as indicated on the site form. This search proved more useful than the previous two search methods. Logistically, however, this was very awkward and it was virtually impossible to determine if some areas of the map were missed, while examining other areas multiple times. The sites located in these three search methods were categorized by the researcher into the following groups: aboriginal; aboriginal and historical (multi-component); forts/military; historic (non-specific); historic waterfront; jetty/wharves/docks/causeways; mills; rice canals; and vessels. The results are incorporated into the report below.

Study of the GASF records was useful for several reasons. The search revealed the difficulty in using the past and current descriptors on the site forms to locate submerged, or partially inundated sites. The records also provided information on the types of sites one might expect in a coastal county, along with information regarding their topographic and environmental characteristics. This can prove useful in determining where other similar site types might be located.

United States Geological Survey (USGS)

Maps and place names often provide location data for potential archaeological sites. For this reason, the Geographic Names Information System (GNIS) was searched online at http://geonames.usgs.gov for potential locations of submerged, flooded, and water-associated sites. The researcher searched for the following key words: canals, ships, wrecks, bridges, mills, and ferries in order to locate those site types recorded in the USGS electronic map database. The search located these four bridges: the Kenneth McCar-

thy, Crooked Bay, Red Bridge, and McCarthy bridges. The search located only one canal listed under that term, that of Saint Marys Cut. Three guts were named. Those included Casey Creek, Grover Creek, and Pumpkin Branch. The number of capes totaled 18. They were listed as follows: Wild Neck, Point Peter, Boys Point, Crews Point Fairfield Point, Lookout Point, Floyds Neck, Grants Point, Hopewell Point, Black Point, Cherry Point, Hazzards Neck, Noddings Point, Abraham Point, Long Point, Table Point, Terrapin Point, and Burbank Point. The search for the word "channel" revealed the largest number of hits. These include: Bailey Cut, Black point Creek, Brickhill River, Buffalo Reaches, Crow Harbor Reach, Cumberland Dividings, Cumberland River, Dever Cut, Dover Cut, Floyd Creek, Floyd Cut, Hawkins Creek, Hells Gate, Intracoastal Waterway, Malkintooh Creek, Mud Creek, Mumford Creek, Noyles Cut, Saint Mars Entrance (two different ones), Shell Creek, The Bulkhead, The Hole, and Umbrella Cut.

United States Army Corps of Engineers (USACE)

The researcher contacted Ms. Judy Wood, archaeologist with the USACE, Savannah District. Ms. Wood has had a long interest in documented shipwrecks and other submerged sites along Georgia's coast. Ms. Wood was asked if the Savannah District office held any records, notes, studies, or other information regarding underwater archaeological sites in Camden County. Researchers determined that the Savannah District office has no substantial information regarding Camden County underwater sites (Ms. Judy Wood, personal communication, July 13, 2006).

National Oceanic and Atmospheric Administration (NOAA)

The National Oceanic and Atmospheric Administration (NOAA)'s Office of Coast Survey, internet site was searched for historical maps and navigational charts at http://historicals.ncd.noaa.gov/historicals/histmap.asp. These holdings are listed as part of NOAA's Historical Map & Chart Project. The site yielded two holdings for Camden County of special interest including a Civil War map and the Coast Chart No.157 from Sapelo Island, Georgia to Amelia Island, Florida (Figure 10). NOAA'a web page for historical hurricane data was studied, which provided a historical context and specific shipwreck information for the Camden County area and other locations (www.aoml.noaa.gov/hrd/Landsea/history/index.html).

Other Internet Web Sites

Examination of the Carl Vinson Institute on line provided a useful source of Camden County maps (www.cviog.ga.edu/Projects/gainfo/histcountymaps/camdenhistmaps.htm). These ranged from 1796-2001. This supplemented maps located at other repositories. The following maps provided details about the study site types in Camden County: Morse (1796); Tanner (1823); Burr (1839); Mitchell (1846); Colton (1855); Johnson (1863); US Coastal Survey (1864); Lloyds (1865); Mitchell (1874); Cram (1883, 1885); Rand McNally (1885, 1895); Central of Georgia (1899); Rand McNally (1910); Hudgins (1915); State Highway Department (1952); and U.S. Geological Survey (1970, 2001). The CVIOG website also contains an extensive historical gazetteer of places in Camden County, many of which are now extinct settlements. This gazetteer does not provide, however, any location or site function information regarding these settlements.

Georgia Genweb
www.rootsweb.com/~gacamden

This county genealogy site was examined for relevant deeds mentioning water-related sites, such as mills, ferries, bridges, etc. This did not prove to be a productive search vehicle for the site types constituting this project.

Other Researchers

Several researchers who have worked in, or had knowledge of, Camden County submerged sites were contacted for relevant information. These included Michael Higgins, Robin Moore, Judy

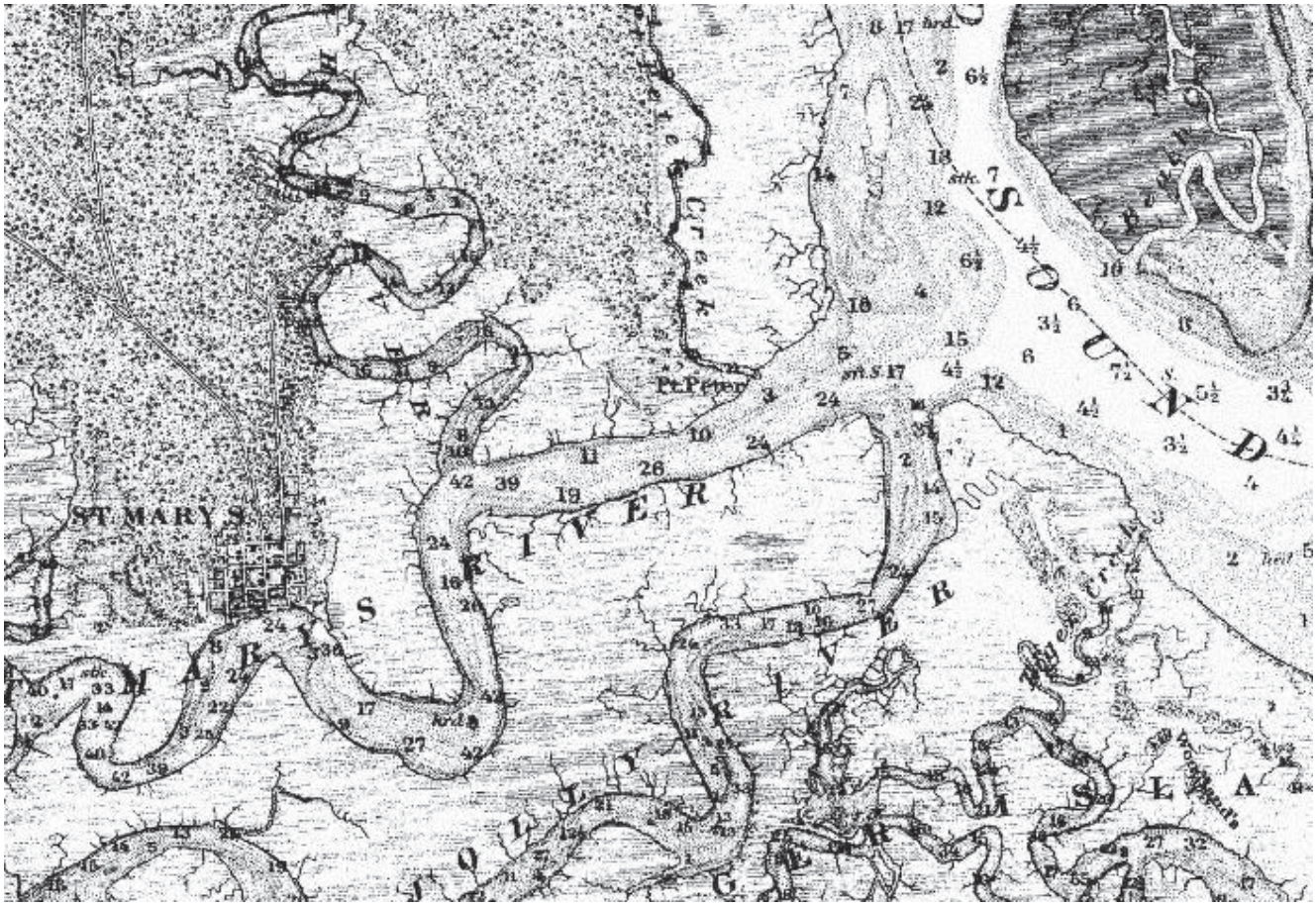

Figure 10 U.S. Coast and Geodetic Service map showing depths of various waterway (1901).

Wood, and Tara Fields. Michael Higgins is heavily involved in The St. Marys Gunboat Project and provided useful information about U.S. Navy gunboats and early 19th century hurricanes. Authors of this report contacted Robin Wood to learn more about the LAMP underwater survey project in St. Augustine, Florida. He and the current Executive Director, Kathy Fleming, provided useful information about the project, its logistics, and its results. Judy Wood is an archaeologist with the USACOE, Savannah District. She was contacted about the agency's holdings for Camden County.

Researchers spoke to Tara Fields, who is an authority on Camden County cemeteries and knowledgeable of local history. Her web site (www.camdencounty.org) contains a wide range of Camden County historical information. Her work has resulted in a thick compilation of cemetery information, including their geographic locations. When asked if any cemeteries in the county have the potential for submerged resources, Ms. Fields noted that the cemetery at the Temple plantation was a possible case. The Temple plantation was in existence by the late 18th century, as indicated on the 1780s map (LOC 2006). Ms. Fields also noted that a number of graves at Point Peter reportedly washed into the water, although 19th century newspaper accounts indicated that this destruction had been complete.

III. Site Context, Site Types and Specific Camden County Sites

Site Context

Camden County is rich in water-related natural resources. Like many coastal counties, much of its area consists of marshes, inlets, harbors, coastline, rivers, creeks, branches, and swamps rather than terrestrial topography. These water resources have been an attraction for human use throughout more than 10,000 years of prehistoric life and over four centuries of historic use. In spite of the connection between these natural and cultural resources, little scientific study has been conducted on submerged archaeological sites in Camden County prior to this preliminary study. Research has shown that Camden County boasts numerous prehistoric and historic submerged sites. Some sites, such as fish weirs and mills were constructed in and adjacent to waterways in order to function properly. Other sites were once terrestrial and became flooded or submerged as a result of intentional or natural activities. For example, water courses have inundated sites as a result of manmade actions, such as pond, lake, or reservoir construction. Sites also become submerged through the result of natural environmental effects. This includes sites preserved by alluvial deposits beneath waterways, as the result of meandering creeks and rivers. Examples of sites that were originally terrestrial sites and later became inundated through erosion, intentional flooding, or natural changes in the directions of water courses have been documented in Georgia in various riverine surveys and in Camden County, specifically, in archaeological site forms (Elliott 1988, 2000, 2001, 2003; GASF).

Native American Sites

Camden County contains a wide variety of Native American sites dating from the Paleoindian through Contact periods. (See the main body of this report for an overview of Native American use of the area.) This variety is evidenced in the GASF, which documents recorded archaeological sites in the county. It is likely that there exists a greater number and variety of sites that have not yet been recorded. This is particularly true for submerged and near-water sites; a site type that has been traditionally ignored, until relatively recently, in most archaeological studies. Prehistoric site types documented and expected to occur within Camden County include camps, hamlets, villages, mounds, trading posts, fish weirs, and dugout canoes. Fish weirs are located in water, of course, and dugout canoes are typically found in or very near a current or former water source. Trading posts were traditionally located near Indian paths, both terrestrial and riverine. The other site types from camps to mounds can be associated with submerged sites if they are eroding into a marsh, creek, or river as described above. Prehistoric site types not expected to be located in Camden County are inundated terrestrial quarries. Camden County has no known natural rock outcrops suitable for prehistoric knapping and quarrying. Given this lack of natural resource, however, it is possible that any rivers and creeks containing natural rock cobbles that have washed downstream from rare Coastal Plain outcrops in other counties, would have been highly sought and used by prehistoric people. Also, the flood plain deposits along the Altamaha River include Piedmont sediments and materials (USDA 1980:3). These may have been treasured, rare sources of lithic materials for prehistoric people. The use of riverine cobbles and boulders from Coastal Plain tributaries for prehistoric knapping has been documented in southwestern Georgia's Baker County (Elliott 2001). Any areas of rocky shoals in tributaries in Camden County may be a potential prehistoric lithic site.

Some of the oldest Native American sites in Camden County are likely located in and around the salt marshes, intra-coastal flats, and western

sides of the barrier islands. It is likely that Paleoindian and Early Archaic sites exist here and under the Atlantic Ocean along the shoreline and offshore on the continental shelf. Little archaeological investigation of these areas in Camden County and other coastal Georgia counties has been conducted resulting in a dearth of knowledge about what could prove ultimately to be the most significant contributions to our knowledge of early man in North America. Tantalizing clues to the existence of these sites include sporadic reports of the recovery of cultural materials in marsh and other submerged environments. In 1980 archaeologists examining dredge spoil piles made during the deepening of the harbor for the King's Bay Submarine Base reported seeing Late Archaic projectile points and various Pleistocene fossils (Dan Elliott, personal communication, August 2, 2006). A recent discovery of a fossil otolith in fossil dredge piles on Cumberland Island, revealed that the fossil had been knapped by a person into a tool prehistorically (Figure 11). It is likely that whenever prehistoric man had access to fossil bones in the area that is now Camden County, he would have taken advantage of the rare opportunity to get stone for knapping tools. Fossils are common along coastal areas and such locations should be considered a likely candidate for prehistoric use.

Figure 11. Man made flake scars on fossilized whale bone found August 2006. (Photo courtesy of Carolyn Rock.)

Finds in coastal areas similar to Camden County reveal the presence of Pleistocene and Holocene period life, including early man. Fossilized giant sloth bones have been discovered in Brunswick, in the Frederica River, and at an undisclosed location of coastal Georgia (Voorhies 1974; Elliott et al 2000:60). Other fossils dating from 25,000-10,000 B.C. have been found in submerged coastal contexts. These fossils include mammoth, mastodon, and horse found in Six-mile swamp (10 miles west of St.Simon's Island) and on Skidaway Island (DePratter 1975:1; Elliott 1985:36). Shrimpers recovered a black fluted chert point from their nets while trawling in 6-8 m deep waters. The boat was in Chatham County, between Wassaw and Ossabaw Island (Anderson et al 1990:25). Archaeological excavation of test units on marsh site 9CH113 in coastal Chatham County revealed cultural lithics buried in the muck (Webb and DePratter 1982). While these were non-diagnostic, the lack of pottery suggests an Archaic period date. Archaeologist Chester DePratter and geologist Jim Howard conducted investigations involving soil coring of areas of barrier islands in order to study geomorphology and cultural deposits. They used archaeological deposits in conjunction with geologic deposition to try to determine the history of various shoreline changes along coastal Georgia (DePratter and Howard 1977, 1980). A synopsis of research by various archaeologists for Archaic Period sites indicates that Archaic shell rings and middens along the coast of Georgia and South Carolina dating to 4200-300 B.P. tend to be "..located in the seaward areas of estuaries, often adjacent to major channels" (Elliott and Sassaman 1995:18). The bases of many of these middens are over a meter below the modern marsh surface. Many of these shell middens and rings have eroded or been submerged (Elliott and Sassaman 1995:18).

Native American Site Types and Specific Camden County Sites

Indian Trails and Trading Paths

Historical documents reveal the locations of several Indian trails that crossed creeks and rivers. These locations are sites in themselves, and they may contain artifacts or features related to use

of the path. This can include camps used temporarily by travelers, trading posts placed in areas of heavy foot and horse traffic, or lithic sites related to any rocky shoals used as riverine crossings. Historic plats of Camden County reveal several such Indian trails crossing rivers and creeks. "Bryants Trading Path" appeared on at least two plats examined during research. The John Webb plat showed the path to cross at least one tributary to a larger waterway. Neither the tributary nor the waterway is named on the plat. The plat is dated 1787 (Figure 12; CCSC Deed Record A&B, Bk A:177). Another plat shows an "Indian Path" as a dotted line crossing "Buffelow [sic] Creek", near where three tributaries feed directly into the creek. The path is situated between these on one side and the swamp and adjacent Great Satilla River. The path crosses the higher ground denoted as "Pine land" (Figure 13).

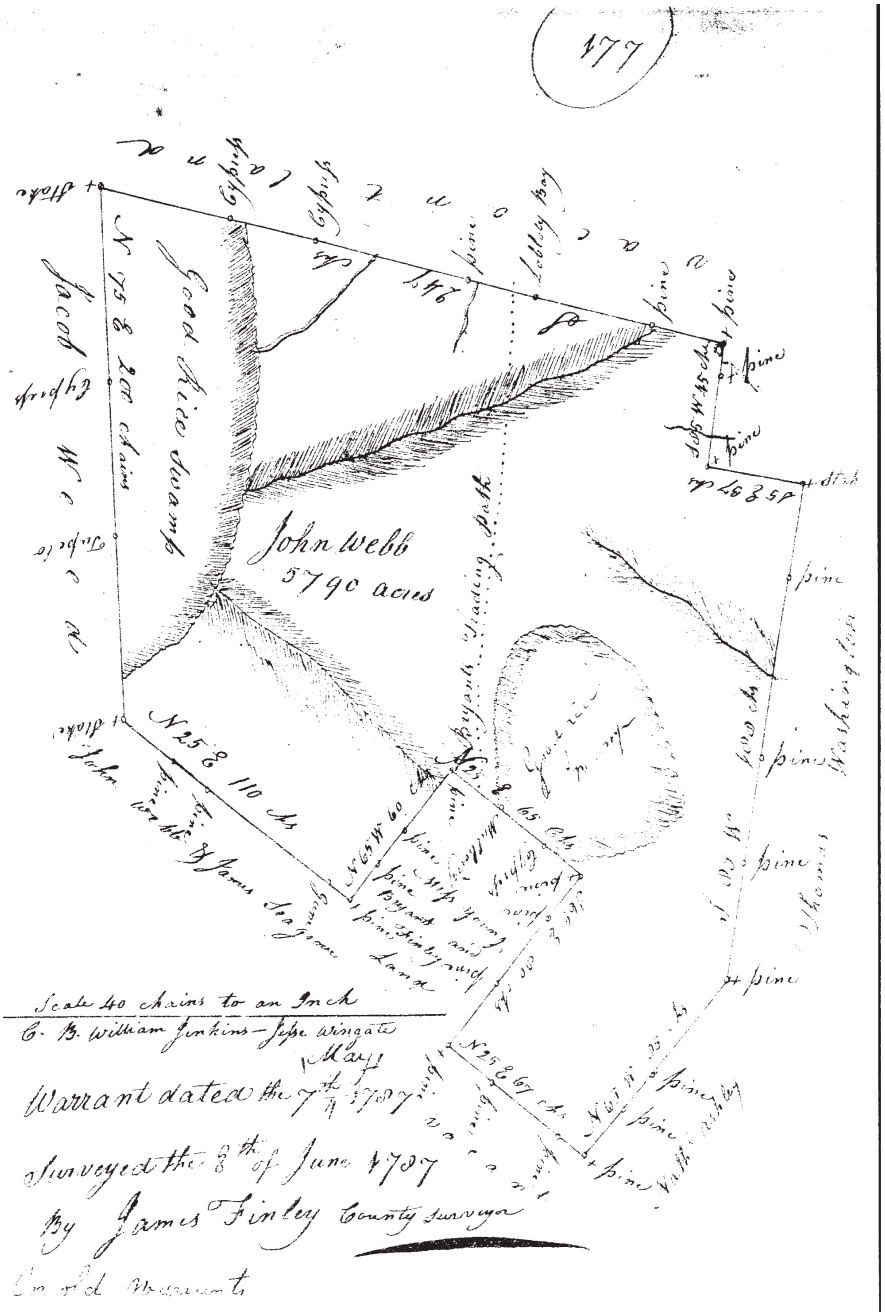

Figure 12. An Indian trading path used in the late 1700s (CCSC Deed Record A&B, BkA:177).

Eroding Prehistoric Terrestrial Sites

The majority of inundated, eroded terrestrial sites located by research for this project consist of sites that have been recorded in the GASF as "eroded" (as opposed to "submerged") and are shown to be adjacent to a marsh, creek, river or other body of water. The majority of the sites are either shell middens or ceramic scatters. These sites are useful in contributing to an understanding of predictive modeling for those terrestrial sites making a transition to becoming partially or completely inundated sites. The terrestrial sites in Camden County that have been recorded to date as "eroded" and that are, in actuality becoming inundated sites as they eroded into marshes or other water bodies, are detailed below.

Site 9CM65 was a middle to late Woodland shell

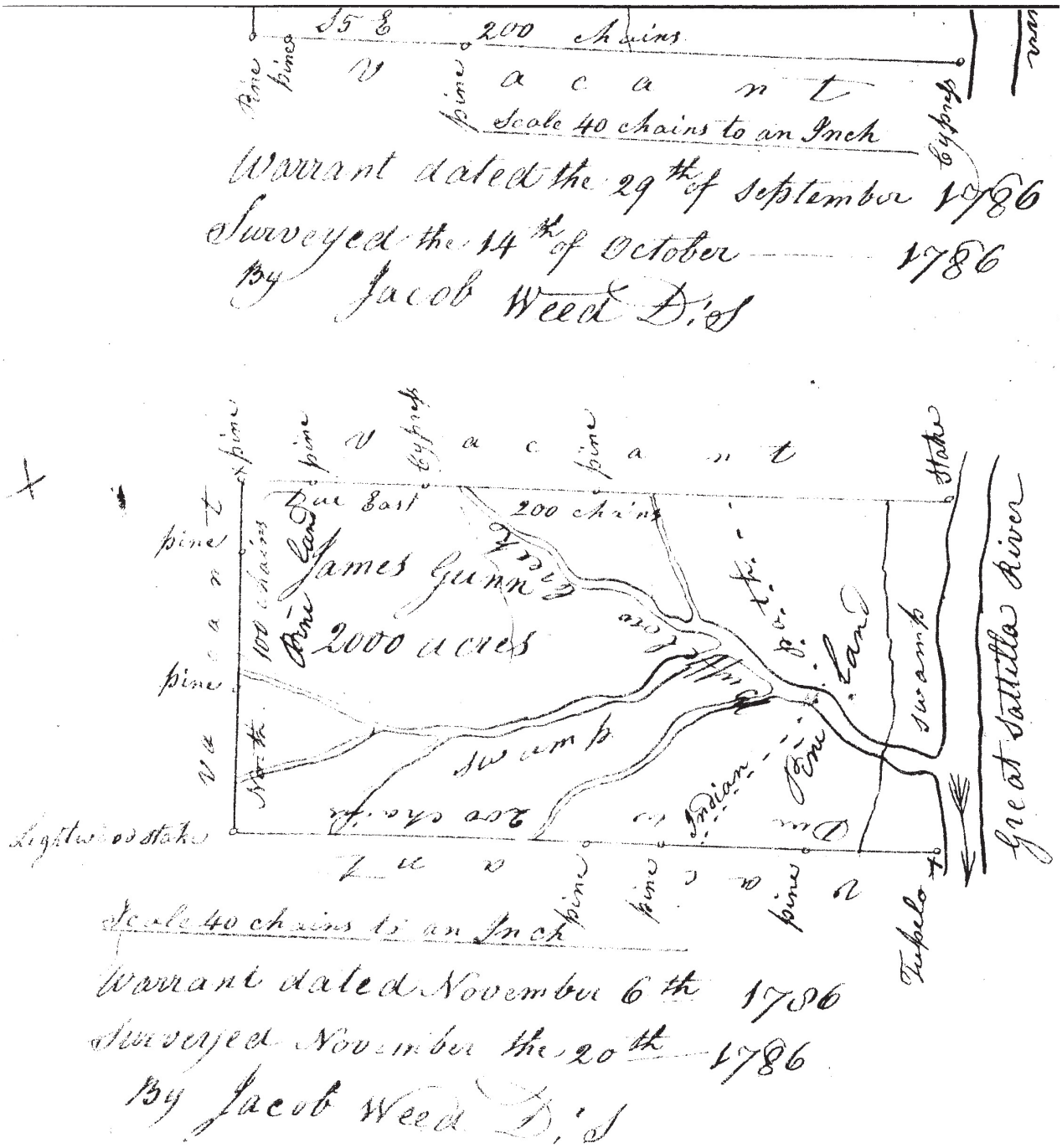

Figure 13. Another portion of the trading path (CCSC Deed Record A&B, BkA:104).

and pottery deposit located on elevated fingers of land extending into Beach Creek. The site was listed as, "actively eroding into Beach Creek" (GASF 9CM65 1978). Archaeologists recorded another shell deposit site in 1976. This site, 9CM84, was listed as "eroded". Diagnostic pottery dates the site to the Late Woodland, Early Mississippian, and Protohistoric periods (GASF 9CM84:1976). Site 9CM85 was discovered by archaeologists initially in 1976 and revisited in 1999, when it was noted that shell was eroding out of the bank and into the marsh. The site is located on Cumberland Island and contains a shell midden and artifact scatter. The cultural periods identified include the Late Archaic, Woodland, Mississippian, and Historic periods.

It is hypothesized that this may be the location of the Spanish mission of San Pedro Y San Pablo de Porturiba, based on the presence of Spanish olive jar sherds and the site location. This partially submerged and eroding site was recommended as eligible for the National Register of Historic Places at the National level (GASF 9CM85:1976; 1999).

Archaeologists recorded a small shell mound measuring approximately 80 m by 30 m and located in a marsh east of Point Peter. This site is listed as 9CM189 and recorded as being 0-5 feet above mean sea level. The eastern edge of the mound is currently eroding into Mill Creek and this erosion is exacerbated by high tide. The site was initially recorded as part of the King's Bay Submarine project in 1978 (GASF 9CM189 1978).

Site 9CM161 is another shell deposit site. It lies at 1.5 m above mean sea level. This was cited as eroding into Shellbine Creek. The site form was recorded in 1979 and contained "St. Johns and 'St. Augustin sherds'" (GASF 9CM161 1979).

An eroding shell midden on the bank of the Crooked River was designated as 9CM23. The form indicated that the midden extended inland about 20 feet and was two inches thick. "The site has sustained a lot of damage from visitors at the park" (GASF 9CM23 n.d.) The site appears to have been located in 1975 and a site form completed at a later date. The cultural affinity of the site is listed as unknown.

Another eroding shell deposit with aboriginal pottery was noted as Site 9CM160. This site was identified in 1975 by Deutschle and Wilson and later recorded in 1979 by GASF staff. The site form indicates the site was "eroding into Shellbine Creek" (GASF 9CM160 1979). The site is located a 1.5 m above sea level. St. Johns and "St Augustin" sherds were observed.

A ceramic scatter on Cumberland Island east of the Cumberland wharf was recorded as 9CM6 in 1976. At that time and during a later revisit (circa 1990 or later), the site located on high bluff on the beach, was eroding into the Cumberland River, near its mouth. The form lists the cultural affinity of the site as Middle Woodland, Early Mississippian, and Protohistoric periods (GASF 9CM6 1990). The section under "Artifacts", however lists "Historic", as well as Deptford (check, linear, simple stamped), Savannah cord-marked and check stamped, and St. Johns check stamped.

Site 9CM48 was located by DePratter and a site form completed in the 1980s by GASF staff. The site is described as "…eroding out of the River beach. Pottery was collected from marsh sediments. Some recent historic material also was recovered (GASF 9CM48 1980). The form did not elaborate on the time period of the site. Either the pottery was not diagnostic or the information did not make it to the form. No maps are on the form however there are UTM coordinates to locate the site.

A ceramic site located in the dunes on Cumberland Island is recorded as "…now completely eroded away". The site was located by DePratter and a site form completed in the 1980s by GASF personnel. Local residents collected pottery from the site and noted that the area was "…covered by charcoal" (GASF 9CM37 1980). While the form indicates that "lots" of pottery was collected from the site, the cultural period of Site 9CM37 is listed as unknown.

Marsh dredging revealed Deptford ceramics on the "Heads Creek" site. This site was recorded as 9CM129. There is no location map on the form, however, there are UTM coordinates and a sketch map of the site. Apparently part of a basin and marsh were dredged for Interstate 95 highway fill. The site was located on a spit of land extending into the marsh. The form suggests that dredging may have removed "…part of the lower extremity of the site" (GASF 9CM129 n.d.) There is no date on the form. Cook collected ceramics and a few chert flakes from the site.

Site 9CM52 is located at 1.5 m above sea level. This large site on Cumberland Island measures 400 m by 400 m. Little information is recorded about it when GASF completed the site form in 1980. The cultural affinity of the site is listed as unknown. There is no information to indicate whether it is a ceramic scatter, shell midden or other type of site. It documents a site located by DePratter (GASF 9CM52 1980).

Site 9CM156 is one of several submerged/inundated sites with both a prehistoric and historic component. Site 9CM156 is located on the Cumberland River at 1.5 m above sea level. It appears to have been located by archaeologists in 1975 and recorded by GASF personnel in 1979. The site form mentions the area as Cabin Bluff and notes that the site contains historic and prehistoric resources. The form indicates that the land around Cabin Bluff is disturbed and that the archaeological resources were located along the beach, beginning where "…the old dock was located" (GASF 9CM156 1979). The site followed the shore northward for about 2,500 feet. Archaeologists predicted the site to extend inland 300-400 feet in a palmetto thicket. Early Deptford ceramics date the prehistoric component of the site to the Middle Woodland period. The historic component of the site consists of a dock for a turpentine still that operated from circa 1899-1915. The Cabin Bluff structures nearby were part of the community associated with the still. A later historic component involves the acquisition of the property by the Sea Island Company for its hunting and resort facilities constructed in 1927. This was followed by acquisition of the property by the Brunswick Pulp and Paper company in 1943 and subsequent construction (GASF 9C156 1979).

Archaeologists observed a scatter in the marsh that was recorded as Site 9CM165. This site measures 120 m by 35 m and sites at an elevation of approximately 2 m above mean sea level (GASF 9CM165 1982). The site lies along the shoreline of a small island. The site is adjacent to the salt marsh of the Crooked River and was described as eroding into the river. This erosion was visible as a shell scatter containing artifacts below the high water mark that came from the exposed bank. An informant reported the presence of a mound at this location in the 1960s and displayed a polished stone celt recovered from the mound at that time. Investigators reported no indication of a mound during the 1982 visit. This Mississippian period site also contained a Spanish olive jar sherd. In addition, the investigator in 1982 collected a total of 66 aboriginal sherds and two chert tools that are now housed at the South Georgia College Archaeology Lab.

Historic plats did show some evidence of Native American sites that can easily predate the contact period, and are likely eroding into waterways based on their locations on riverine bodies, adjacent to high-energy situations such as at the confluence of two rivers. One example of this is the point of land at the confluence of the Saint Marys River and the Cumberland River. This point of land is known historically as Point Peter. A 1789 plat of the area records a "Shell Bank" along the property fronting the Cumberland River (Figure 14) included a salt marsh. It is likely that the high ground along the river bank, the ecological area of the salt marsh, and the river itself, provided a good spot for either settlement or use of the area prehistorically. The notation of the "Shell Bank" indicates an oyster midden most probably created by Native Americans. Its location at the confluence suggests that the site may be partially in the river as erosion occurs.

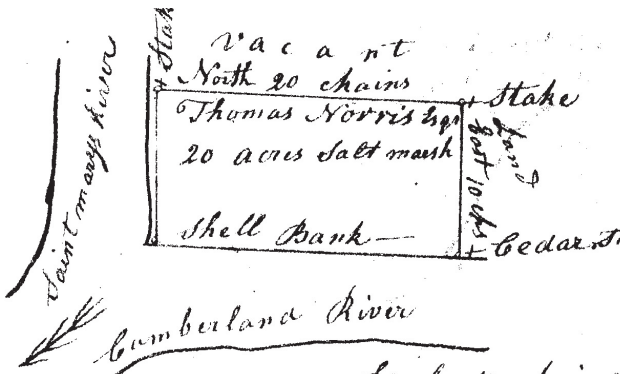

Figure 14. Eroding shell bank at Point Peter (CCSC Deed Record A&B, BkA:186).

A site of a probable Native American village is depicted on a plat from 1786 (Figure15). This plat labels "Old Town Bluff" adjacent to a sharp bend in the "Great Sattilla [sic] River". The "Old Town' most likely refers to an old Indian town once situated on the bluff. The sharp bend in the river would direct the flow of the water directly at the bank on which the site was situated. It is extremely likely that this would create erosion of the site into the Satilla River. If a site is located across the river on the opposite bank, however, it is likely that it would be preserved under alluvial deposits, as the force of the water would be considerably slowed on this side of the river and drop its sediment load along the inside bend.

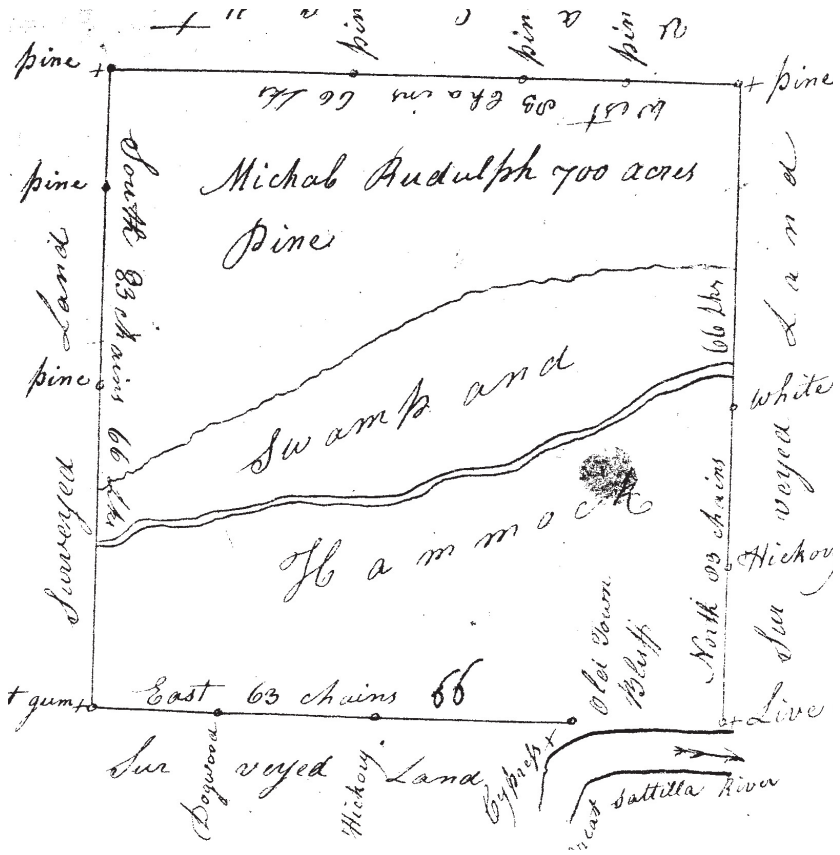

Figure 15. Note the previously inhabited bluff above the riverbend (CCSC Deed Record A&B, BkA:129).

Historic Sites

As one of Georgia's earliest historically used counties, Camden County has a diverse range of historic site types that date from the Protohistoric period and colonial period to modern times. These include Spanish exploration and mission sites. The county definitely has colonial and later period sites, many of which are submerged or inundated. Submerged or partially inundated site types from various periods can include forts, waterfronts, wharfs, docks, mills, dams, mill ponds, rice gates, canals, ferries, bridges, abandoned vessels, and shipwrecks. The brief historical overview below provides some context for the varied site types one should expect in Camden County.

By 1790 there were 305 people listed as occupants of Camden County (USDA 1980:2). Plantation economies grew and dominated the county during the first part of the nineteenth century. The low lying lands of the county and the waterways influenced by tidal backup presented a natural environment for rice agriculture. In addition, sea island cotton was grown on island tracts. The success of these cash crops made Camden and other coastal counties some of Georgia's most intensively farmed land at this time (USDA 19803). Most plantations supplemented the main crops of rice and cotton with fruits and vegetables for their own consumption. Southern agricultural products were shipped down the St. Marys River to Spanish Florida through Amelia Island. Historians report that between 1810 and 1820 the Spanish demand for produce resulted in upward of 300 square-rigged sailing vessels in Spanish waters (Bullard 1983:26). In spite of the 1808 law banning the importation of African slaves to America, during the early decades of the 19th century, the city of St. Marys was "…notorious…as a leading entrepot for the slave trade, carried on by Connecticut, Massachusetts, and

Rhode Island shipmasters…(Bullard 1983:26).

In 1813 St. Marys boasted a population of approximately 800 residents. Shortly, however, the population fell to 600 inhabitants (Bullard 1983:26). This was likely a result of the War of 1812 activities directly impacting St. Marys. Residents of St. Marys and other portions of Camden County were terrorized during the War of 1812. They suffered attacks from both British soldiers and Native Americans. On April 19, 1815, a resident of St. Marys returned to the city to find "…the city almost a desolation. It had been plundered of public and private property to the amount of near half a million of dollars. A great deal of private property, not taken away, was wantonly destroyed" (cited in Arnow 1955b:22).

Camden County quickly rebounded from the destruction of 1815, however, and by 1845 a total of 5,482 residents called Camden County home (USDA 1980:2). By1861 the white males in Camden County eligible to vote numbered at just under 250. African and African-American slaves totaled approximately 4,000. St. Mary's free residents numbered 250-300, while its enslaved population matched those figures.

Camden County residents were extremely anxious during the Civil War, realizing that they were in an unprotected, vulnerable, and desirable area that the Union might soon target. Residents wrote a letter the president of the Confederate States, Jefferson Davis. The citizens reminded President Davis that Camden County was one of the remotest parts of the Confederacy's sea-coast and that it was not protected by anything except a militia. Residents feared a slave revolt if Union forces came to the county and instigated a rebellion.

By 1900 Camden County had grown to a population of 7,669 (USDA 1980:2). St. Marys found prosperity in the early twentieth century in several areas including the canning industry and continued tourism. Canneries operated directly on the town's waterfront. Initially shrimp was canned and later sweet potatoes and string beans were added to the product lines (Barefoot 2001:25). Forestry continues the county's longstanding economic interest in trees, begun initially with the naval stores and ship construction industries.

Tourism had been a draw in various portions of the county from its early days as a port and steamboat landing through the establishment of the Old Dixie Highway through Kingsland in 1912. Tourists passing through the county in the late 1920s could stay at places like Clark's Island, which was developed into the Island Grove Motel and Tourist Camp (Barefoot 2001:75). This served tourist well at a time when places for travels appeared irregularly and chain motels and restaurants were unknown concepts. The establishment of the military base of Kings Bay Submarine Base has provided an economic boon to the area. The 1977 population of the county at 11,334, however remained much smaller than neighboring Glynn County's population of 50, 528 (USDA 1980:2) Woodbine serves as the current county seat.

Historic Site Types and Specific Camden County Historic Sites

Descriptions of some of the varieties of historic sites types located in Camden County are listed below. These include plantations, mills, naval stores (logging and turpentining), vessels and shipbuilding (small craft, ferries and ferry landings, sailing vessels, steamboats, sunken craft, and ballast and jetties), shipyards, wharves (docks, warehouses, and waterfronts), non-ferry river crossings (bridges, fords, and shoals), military, and the historic fishing industry (fishweirs, oystering, crabbing, processing, and shipping). Examples of representative site types of many of these were located in documents during the research for this project and are discussed below.

Spanish Sites
Three previously recorded sites falling in the category of partially inundated or submerged were located during this study that date to the period of Spanish exploration and colonization of the area that is now southeastern Georgia and northern Florida. Site 9CM85 and Site 9CM165 contained fragments of Spanish olive jars. Site forms suggest that the latter site may be a Spanish mission. Both sites are described in the prehistoric section above, since they are multicomponent sites that contain prehistoric and historic artifacts. The third previously recorded site that is attributed to a Spanish mission is Site 9CM14. This site is the Dungeness Wharf site and archaeologists in 1976 recorded the presence of Spanish olive jar fragments in addition to diagnostic sherds from the Middle and Late Woodland, Early and Late Mississippian, and "historic aboriginal" (GASF 9CM14 1980). The site is located on Cumberland Island and archaeologists at that time attributed it to the Spanish mission of San Pedro de Mocama. The form notes that the site has been damaged by wave action and intensive cultivation in the past.

MilitaryForts
Forts are included in this study because virtually all historic forts in the 18th and early 19th centuries were located on waterways. It is likely that these waterways contain parts of these sites, either as the result of erosion or as the result of activity associated with the waterway. The latter may include intentional dumping of debris in the water, shipwrecks associated with the forts, items lost during loading and unloading vessels that were transporting goods to and from the forts, or battle or skirmish activity between the forts and vessels in the water.

Camden County has been the site of numerous fortification constructions. These include Point Peter, Fort McIntosh, Fort St. Andrews, and Fort William. The name Burnt Fort implies a fortified establishment, however, nothing further has been documented on this site regarding fortifications. For an excellent overview of the forts in Camden County and their histories, the reader is referred to Daniel Elliott's summary in the "Pre-Civil War Forts Initiative" posted on the LAMAR Institute's web page at www.lamarinstitute.org/reports.

Point Peter appears on numerous historic and modern maps. Recent archaeological survey and data recovery investigated the fortification located there and given official site number 9CM242. It is included in this report because the site was recorded as "…eroding out of the creek bank", along with the fact that, "Most of the site sits in the marsh and is regularly inundated by the changing tides". In addition, "The site may extend further into the marsh…" (GASF 9CM242 2003). The marsh is adjacent to the St. Marys River. Survey recorded the site as measuring 300 by 180 meters, at an elevation of one meter above sea level. The site dates to the period of circa 1793-1819 and was the scene of a War of 1812 battle. The integrity of the site and its National Register recommendation of eligible, as revealed during the 2003 survey, led to later data recovery prior to commercial development of the area. Brockington and Associates conducted the archaeological investigations here and in the immediate area. The report on their excavations at Point Peter is not presently available.

Site 9CM245 is associated geographically and temporally with the Point Peter Site 9CM242. This site is also is likely eroding into the marsh and Point Peter Creek. There is no mention of erosion or surface artifacts eroding out of the bank and into the water, however, positive shovel tests appear to go to the water's edge. The historic component of the site includes tabby, brick fragments, colonoware sherds, historic ceramics, bottle glass, and cut nails. The prehistoric component includes shell middens, residual and plain sherds, along with unidentified stamped, curvilinear complicated stamped pottery. Tempering included sand and grog. Animal bone and shells were common (GASF 9CM245 2003).

Another site recorded as being associated with

Point Peter activities is Site 9CM244 (GASF 9CM244 2003). This site is not described as eroding into Point Peter Creek and the shovel tests on the site form map do not are not at the interface between the landform and the water, so one cannot ascertain whether positive shovel tests indicate erosion into the creek. The other sites nearby, however, suggest that this site may also have an erosion problem either now or in the future given its location adjacent to the creek. Its slightly higher elevation at 5 m suggests that it is not as likely to become as easily inundated.

Fort McIntosh was constructed by the American Patriots in 1776. It was destroyed by the British and Loyalist troops in 1778. It was located at the confluence of the Great Satilla River and Deep Creek. A 1787 plat of Jacob Weed's 745 acres shows the fort (Deed Record A&B, Bk B:170). It appears to occupy high ground between the river, creek and a swamp. Historic plats indicate that the fort is located in present-day Brantley County, although artifacts and features associated with the fort may lie submerged in the Satilla River, or may exist on the Camden County side of the river.

Fort William was built by the Georgia colonists under the direction of General James Oglethorpe in the 1730s. Although the fort was only garrisoned until the early 1740s, it appears on a 1785 plat (Figure16). It was drawn and labeled at the tip of Cumberland Island, on the Saint Marys inlet across the water from Amelia Island. The fort was located opposite the confluence of the Cumberland and Saint Marys rivers. It was located on the 200 acre property of Henry Osborne (Deed Record A&B, Bk A:43). By 1800, Fort William was still depicted on maps, despite its long abandonment. A plat from that period shows the fort at the tip of Cumberland Island and also records the owner of the property on which the fort sat. The owner, Jacob Weed held 100 acres in this tract that included the fort (Figure 17). A site form in the GASF recorded Fort William as Site 9CM112. This appears to be based solely on a historical reference to a fort built in 1740 by Oglethorpe as a defense against the Spanish. The site form contains no UTM coordinates or map information and no indication that archeological investigation was conducted (GASF 9CM112). There may have been an attempt to do remote sensing survey for this fort, but this has not been verified (John Fry, personal communication, August 24, 2006).

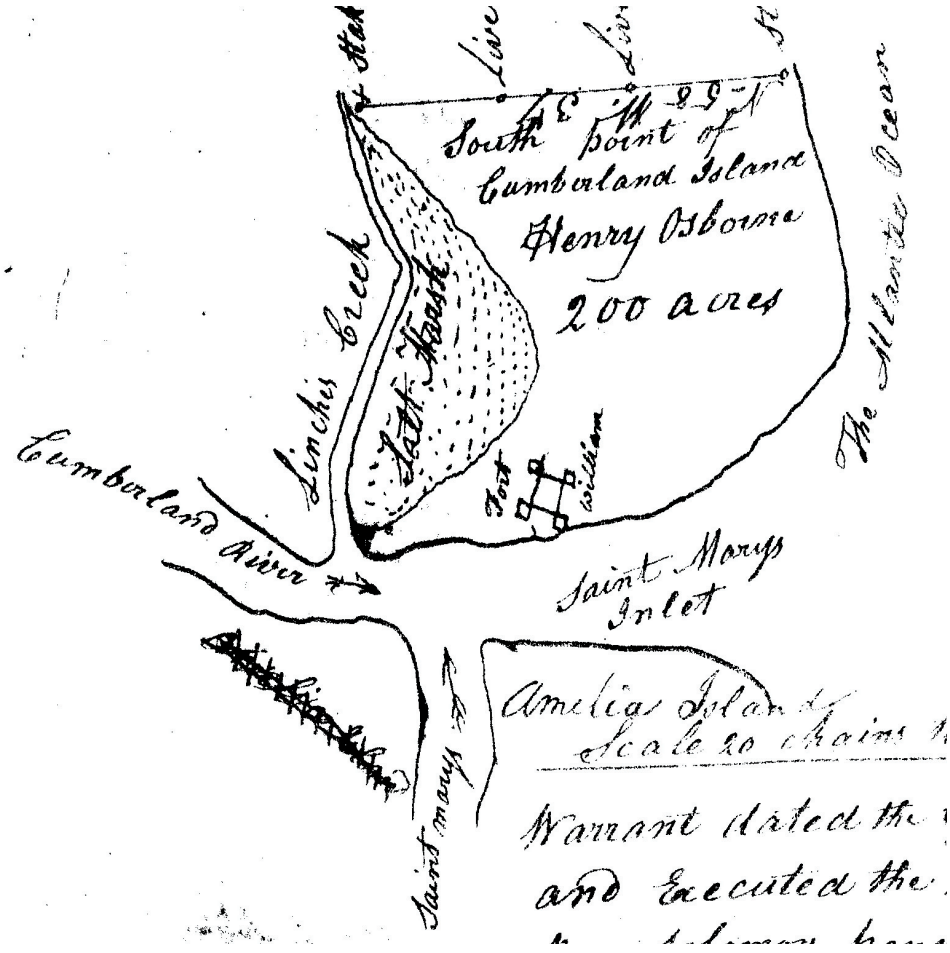

Figure 16. A 1785 drawing of Fort William (Deed Record A&B, BkA:43).

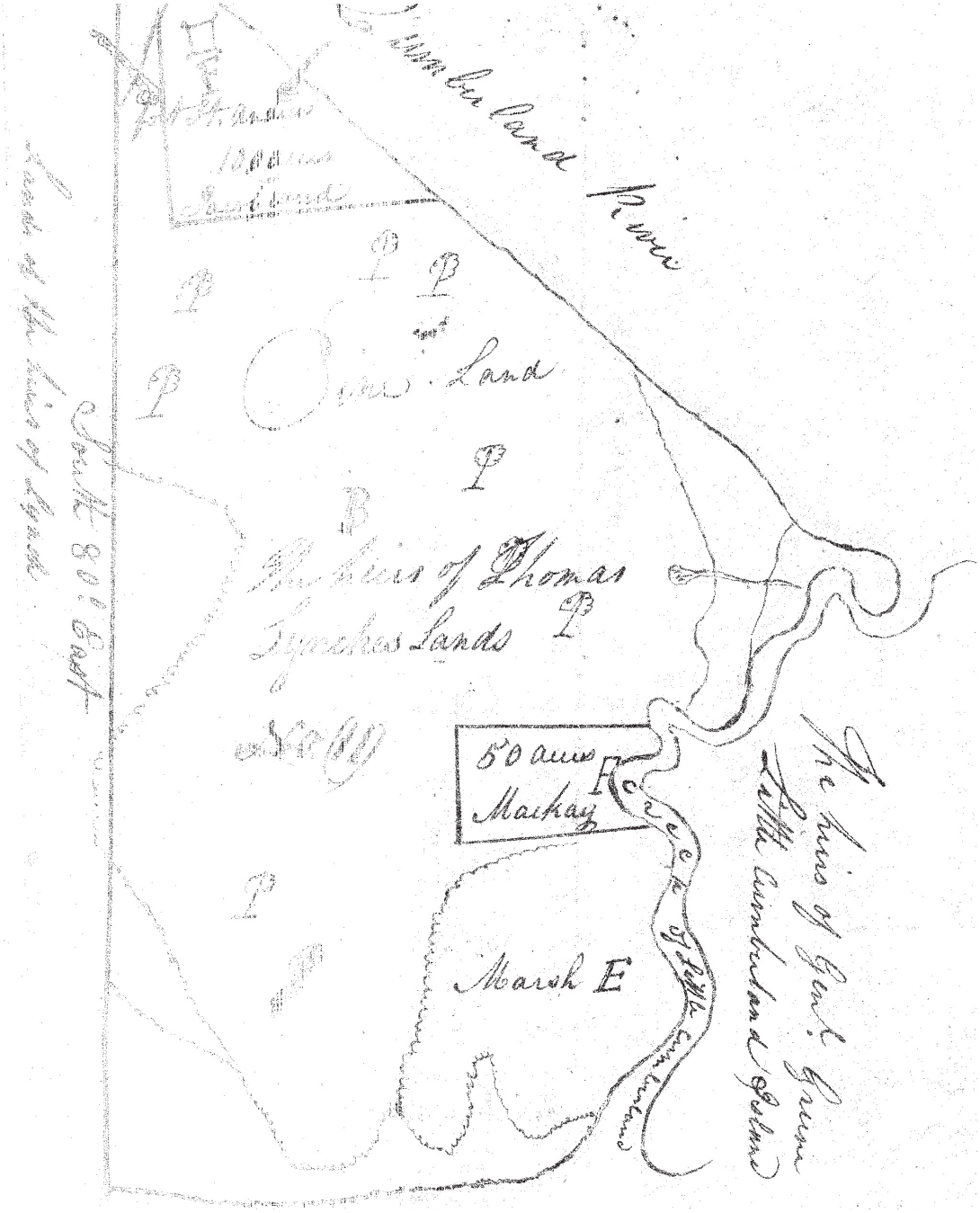

Figure 17. Fort William on Weed's tract (Camden County Field Notes:99).

Fort St. Andrews is another colonial era fort that was built by the Georgians on the northern tip of Cumberland Island. The fort is listed in the GASF as Site 9CM113 (GASF 9CM113 n.d.). This listing appears to be based solely on historical records detailing Oglethorpe's founding of the fort in 1736 and its subsequent abandonment in 1742. The form contains no UTM coordinates, maps, or references to archaeological investigation. It does refer the reader to the GASF form for Site 9CM89. That site form calls the site "Zone –Tarrapin Point" and indicates that this location was "Traditionally the site of F. San Andrew" (GASF 9CM89 1979). UTM numbers record the location of this site, also known as the National Park Service site, NPS-CAM 28. The form indicates that the site is on the "high bluffs", however the elevation is listed as 2 m

above sea level. This elevation may be prone to flooding and/or erosion, however no indication of this was made on the site form. The site of 9CM89 contains an aboriginal occupation and the site has been heavily pot-hunted. Recently, Carolyn Rock conducted archaeological investigations at Fort St. Andrews and has identified intact possible artifacts associated with the fort. Her study is currently under review by the National Park Service. Parts of the fortification may have eroded into the ocean. Figure 18 shows the northern edge of the site and the extreme erosion from the Atlantic Ocean and Cumberland Sound. The potential for submerged resources in this vicinity has not been assessed.

Figure 18. Bank at Fort St. Andrews eroding daily. (Courtesy of Caroln Rock.)

A 1787 plat showing the location of "Burnt Fort" depicts the label but no fort symbol, unlike plats and maps that show other forts and associated icons. The label is written on the bank of the "Great Sattilla [sic] River" on the high ground between two swamps (Figure 19). It is located at the intersection of the "Great Road to Saint

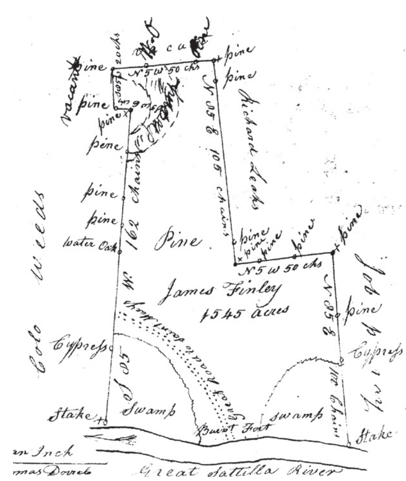

Figure 19. Burnt Fort (Deed Record A&B, BkA:169)

Marys" and the Satilla River. No military archaeological sites have been identified in the Burnt Fort vicinity.

Plantations (Rice, Cotton, Other)
Camden County plantations usually contained several water-related site types. These included canals, dikes, dams, ponds, wharves, docks, and mills. Rice plantations often contained the largest numbers of water-related features since rice agriculture required intensive man-made interventions, particularly in areas above tidal flow. These areas required canals with trunks to regulate the flooding of fields. Dams and dikes played a part in keeping the water in the selected fields for the necessary period of time. Below are a few limited examples of this site type common to Camden County. One would expect all the rice plantations in the county to contain submerged and inundated sites.

Ivanhoe Plantation
One example of a rice plantation in Camden County can be seen in the Ivanhoe Plantation. By 1849 Colonel George W. Owen was practicing rice agriculture on the plantation. The fragile 1849 plat of this plantation (Hughes) reveals two of at least three rice fields, an upland field, barns, a mansion, a board (sawmilled) fence, a steam threshing machine, an overseer's lot with house, the negroes' lot, roads, hammock land and a bridge. The plat also depicts other dams, canals and a guard house.

Two tributaries to the Satilla River are depicted on the map. A dam is located near the largest one which allows Rice Fields No. 2 and 3 to be flooded. The dam also protects the upland field, barns, and plantation house from flooding. A secondary tributary to the Satilla River appears to have been altered by the placement of dikes along both sides of it. The unnatural straightness of the waterway also suggests that it has been altered from a winding creek to a linear canal.

The steam threshing mill indicates that rice was brought from the fields to the mill where it was threshed and placed either in the nearby barn for later shipment, or immediately put on vessels docked at the adjacent wharf, for shipment to Savannah or other ports.

Woodbine Plantation
This rice plantation was also located on the Satilla River. It was a tidal plantation, meaning that the rice fields could be flooded when high tides backed up the fresh water in the Satilla River. John Bailey owned the plantation in early nineteenth century. His son Henry inherited it. The plantation was then passed on to Henry's three children. James King Bedell acquired it next (Barefoot 2001:29). Rice agriculture dominated the plantation, with 300 acres of the holdings being tidal acres. Timbering was a secondary plantation economy. James King Bedell founded the town of Woodbine, in Camden County, and sold a right of way to the railroad to encourage its operation through the county (Reddick 1976). The GASF has a listing for a rice plantation in Woodbine. Site 9CM291 includes evidence of the original plantation house, as well as rice canals and dikes, and old roads (GASF 9CM291 2006). This site was recorded by Carolyn Rock. The site dates to the Antebellum and Postbellum historic periods.

The GASF has another listing for a rice plantation in Camden County. It is designated 9CM194 and was located during the Kings Bay Submarine Base survey in 1978. The site is not shown to be inundated or submerged on the plan map, however a canal and associated dikes are visible leading up to the site. This appears to have been created for historic rice agriculture. Artifacts located in the field at the end of the dike were concentrated in two areas and date between 1790-1860. It appears that the artifact concentrations represent plantation-related structures that are associated with the rice dikes and canals. This site was destroyed by construction of the Naval facility.

Mills (Grist/Rope/Steam/Saw)
The term milling covers a substantial number of functions, operations, techniques, and by-prod-

ucts. Some common mill types include grist mills to grind corn, flour, and other meal; cane mills to grind sugar cane; rope mills to turn multiple fibers into single ropes; textile mills to weave multiple fibers into cloth; and sawmills to cut raw timber into lumber.

Mills generally operate on waterways using the flow of water directly from creeks or dammed into ponds to operate overshot, undershot, or turbine water wheels to generate the energy needed to operate whatever function being served. Such mills often employed wings or wingdams, raceways, and other man-made modifications to the landscape to provide efficient operation. Some mills, particularly sawmills, could be portable operations using steam as a source of energy. While they required a water source to fill the boilers to make steam, they did not use water current as a direct source of energy generation. The water source, therefore, could be static and smaller than those required by traditional watermills. One example of a mill not powered by a creek was a grist mill near Tarboro. It contained an upright waterwheel operated by an artesian well (Barefoot 2001:63). The discussion in this report, however, will focus on mills located in and adjacent to the waterways that they are employing as a power source.

A circa 1809-1812 plat of a flourishing plantation depicts a large mill (Figure 20). The plantation lies just upstream on the St. Marys River from the town of St. Marys. It has a large plantation house, three slave houses by the main house and field, and two slave houses next to the mill. There is a pavilion a slight distance away from the mill and may have been used in rice threshing, storage or other agriculturally-related activity. The mill does not sit directly on the St. Marys River or the nearby creek. The mill is situated at the edge of where the marsh meets the high ground of a hammock. The mill is supplied with water by a long, wide, gently curving raceway running from a feeder tributary of the creek and through what looks to be a mill pond and feeder branches. The raceway has banked levees and a sluice gate.

Sawmills operated on the Satilla River as early as the 1760s and were common by the nineteenth century. A mention of one of the first sawmills in the county dates to June, 1766, in a petition by Donald Mackay. He tells of "…having already begun to erect a saw Mill…" on his property on the south side of the Satilla River (Arnow 1955b:22). Mackay wanted permission to log 1,000 acres of pine on the adjacent property for a period of one year. Sawmilling at small family-owned mills continued throughout the eighteenth and nineteenth centuries. John and James Bailey operated a sawmill on the Satilla River in the 1870s. As with many mills, it became a focus of community interaction. The Bailey mill included an associated post office, commissary and hotel (Barefoot 2001:3).

The GASF contains a site form for the community that prospered around a Satilla sawmill (GASF 9CM203 1981). This site, 9CM203, was purported to be located about one quarter mile upstream from the mill. The site of the community was not a submerged site itself, and therefore not discussed further in this report. Several other site forms are historic scatters or house sites that surveyors thought were associated with Bailey's Mill. Jim Bailey's Mill was recorded by archaeologists as Site 9CM224. It was located at an elevation of 1.5 m on a stream near its confluence with the Satilla River. A detailed description of the mill remains on the form reads as follows, "The stream has been lined along its banks with planks paralleling the stream and either covered or floored with planks lying adjacent to each other and perpendicular to the stream" (GASF 9CM224 1988). The mill was recorded in 1988 by Dan Simpkins of West Georgia College, who noted that the planks were only visible at low tide when they were not submerged. Interestingly, the category of "Submerged" was not marked on this site form. A wetland near the site may have served as a mill pond, allowing water to be diverted into it during high tide so that the mill could be used when needed.

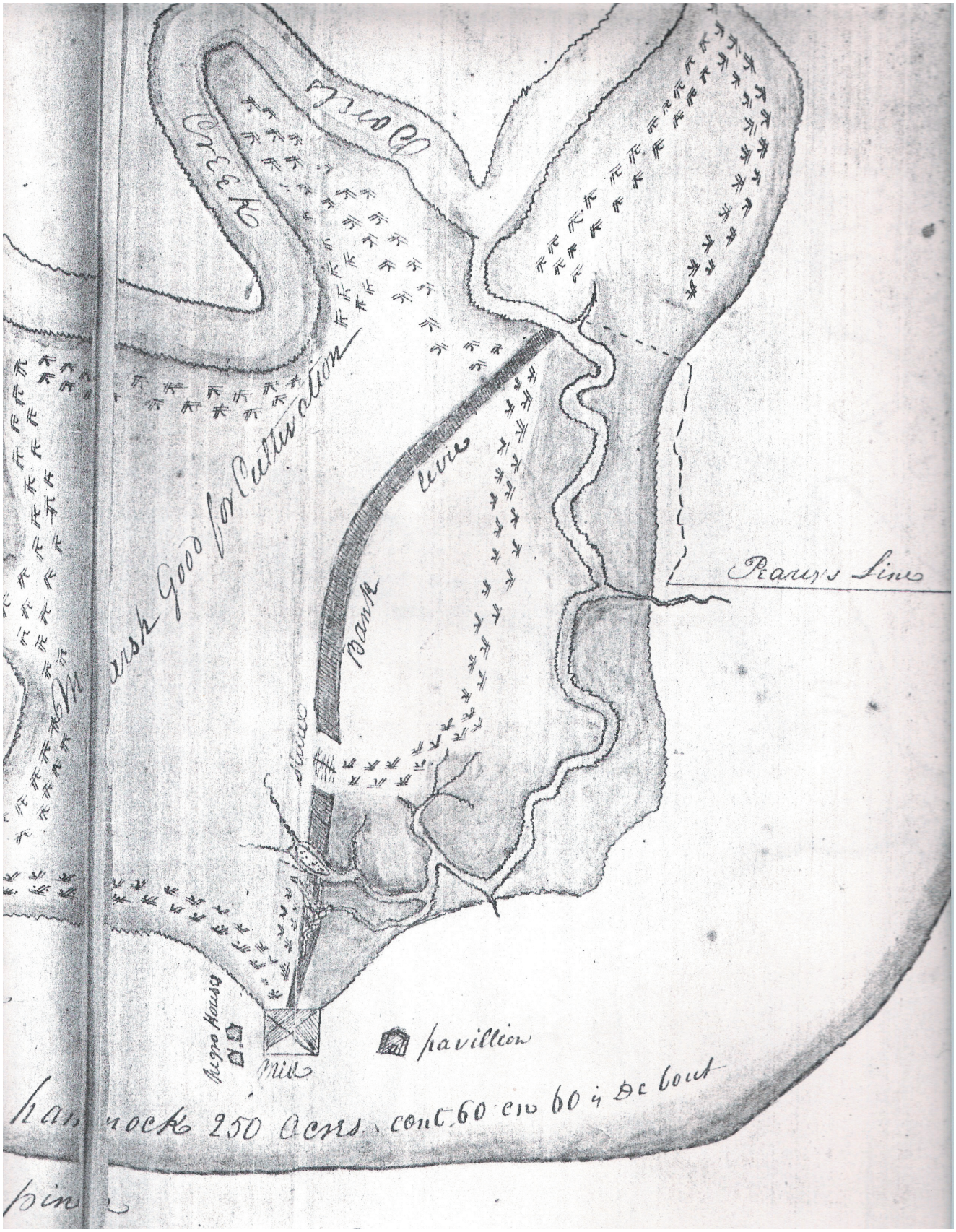

Figure 20. Rice plantation with mill and other necessities (CCSC Deed Bk H:50).

An early sawmill operating in 1793 used water from Mill Creek, a tributary of the Western Shore River (Figure 21). This river flowed into the main branch of the Cumberland River, near its intersection with McIntosh Creek and the west branch of the Cumberland River. The sawmill was located on the property of William Johnston, who owned a total of 700 acres in this tract (Camden County Land Plats, Book C:80). The area on the plat in the vicinity of the sawmill is staked at regular, unnatural corners. This sug-

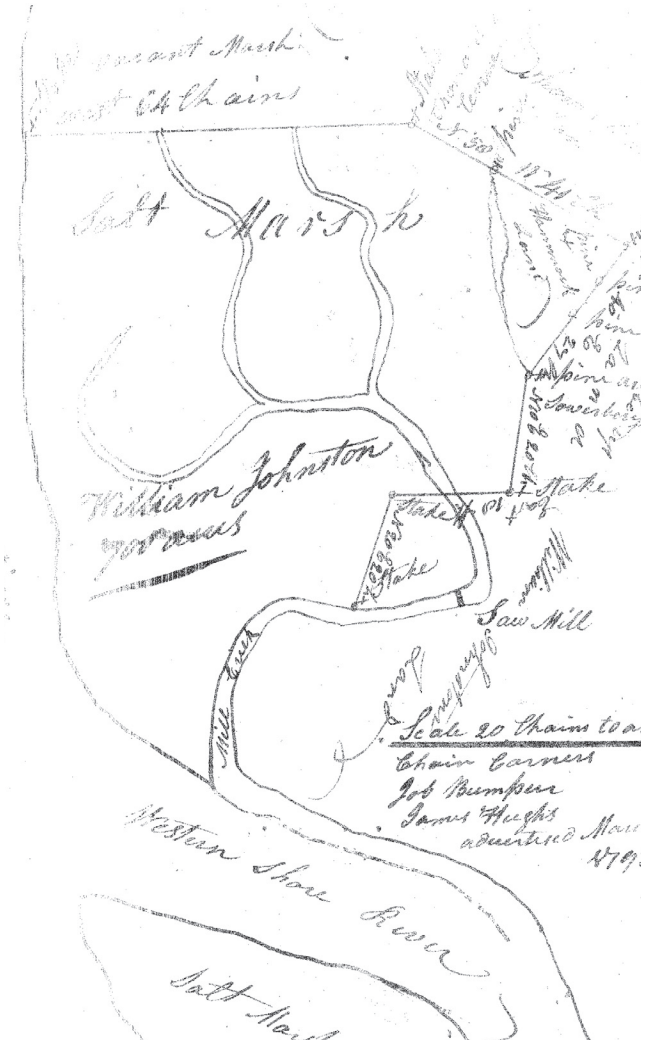

Figure 21. A late 18th century sawmill (Camden County Land Plats, Book C:80)

gests that the mill, itself, was intentionally staked with a specific buffer around it to be included and excluded from various deed sales.

The town of St. Marys contained numerous sawmills. The earliest one is reputed to have been located on the North River bank, in the eastern section of the area that became the Kraft Corporation. Prior to the Civil War this mill was known as Chapman's Mill, and operated as a steam mill using well water located "…a short distance from the river bank" (Arnow 1955b:22). Arnow reports, "The site of that well is now well out in the river" (Arnow 1955b:22). That would make the well and possibly the entire mill an underwater site now. The second half of the nineteenth century saw the establishment of at least three new mills. Minimally, two of these were on the river and are assumed to have been water powered. S.L. Burns and Company operated a saw mill on the St. Marys River and another one on the North River. The company's New Mill burned (Arnow 1955b:25).

Two other possible mill ponds in Camden County are listed in the GASF, but include little information concerning them. Site 9CM108 is listed as Plum Orchard pond. Site 9CM109 is Ashley pond. Both were mentioned in a NPS report authored by Ehrenhard in 1976. The only information on the site forms are UTM coordinates and a section of part of the report. The report text states, "It is probable that some of the berms and canals were constructed during the early plantation period as well as certain ponds, i.e., Plum Orchard Pond and Ashley Pond (map 3, No's. 11, 23" (GASF 9CM108 and 9CM109 nd). Based on the lack of information on the site forms, it is difficult to determine if these are ponds for mills or for some other purpose such as rice agriculture.

Naval Stores Industries

The naval stores industry in Camden County created numerous riverine-related jobs and venues associated with the sub-industries of logging and turpentining. Logging for the massive live oaks used in ship construction occurred as early as the 1700s in Camden County. Logging of live oaks eventually gave way to logging pine trees. Much of this latter logging consisted of yellow pine harvesting for their heart-pine centers (Arnow 1955b:25). Loggers rafted large amounts of tim-

ber downriver in Camden County between 1872 and 1910, when mills in the county prospered (Barefoot 2001:18). Site types associated with the naval stores industry includes logging-related sites such as holding ponds, narrow gauge rail lines, heart pine log jams, sunken logs, turpentine stills, and docks and wharves.

Numerous turpentine stills dotted the Camden County landscape. These included operations at Colesburg, Scotchville and Silco (Barefoot 2001:31). The turpentine industry is one that contributed to the county economy for an extended period of time. This is evident in the transition of turpentine operations at Silco, where the private company sold the operation to Georgia Forest Products, which eventually became the large corporation of Union Camp (Barefoot 2001:31). Research revealed one recorded underwater archaeological site associated with the turpentine industry. Site 9CM156 was a dock for a turpentine still and the turpentine industry in the Cabin Bluff area (GASF 9CM156 1979). This site is detailed above in the prehistoric section, as it was a multi-component prehistoric and historic site.

Vessels and Shipbuilding

Various historical accounts contribute to our knowledge of the types of vessels that frequented Camden County waterways in the past. These accounts indicate the presence of ferries, sailing vessels, steamboats, and vernacular boats. Items associated with vessels, such as anchors and ballast, can be found in both historical documents and in the archaeological record.

Small Craft

A wide variety of small craft were used for both general and specific purposes in Camden County. These include river launches, barges, revenue cutters, and vernacular watercraft. River launches were a popular small craft in Camden County. These craft easily navigated the Satilla River and smaller tributaries within the county. The launches and their operators served the needs of various settlements throughout the county during the nineteenth and early twentieth centuries. A.H. MacDonell was one riverman operating such a launch. A photograph shows his rather cozy vessel with an enclosed canvas superstructure housing a cook stove and other functional items (Barefoot 2001:30). Henry Hamilton Floyd's journal illustrates the reliance on small and large boats in the mid-nineteenth century. Floyd mentions several boating-related incidents in his journal in 1852. Several times he mentions leaving his home for various places by boat. "I left here before light for Cabin Bluff, got in my boat which was sent to the Bluff last afternoon, and at 8 o'clock I was in St. Marys" (Crypt 2006) On another occasion Floyd sends the boat to get corn in St. Marys. While boats were most often functional, they also served recreation and leisure purposes even in the nineteenth century. Floyd illustrates this when he mentions in his diary, "I received from Savannah on the Steamer Welaka the race boat Tho's F. Bryan" (Crypt 2006). Other examples of small vernacular watercraft of the Georgia coast are illustrated in Fleetwood (1995).

Barges also plied the waterways of the county. Barges were relatively inexpensive vessels that were easy to construct without a great degree of ship building experience necessary. Plantations took advantage of barges to move goods and produce. The military used barges to transport troops and artillery. Historical accounts report the use of barges on the St. Marys River during the War of 1812. In fact, barges full of British troops posed such a real threat to Camden County residents that they wrote about them to Georgia Governor Peter Early in a letter asking for better protection from the British and from Native Americans siding with either the British or the Spanish (Arnow 1955a:59). Two accounts mention British barges, numbering either 6 or 7 or totaling 23, traveling the St. Marys River in a plan to attack the city of St. Marys (Arnow 1955a:60). While the barges in these particular accounts did not sink, it is likely that barges account for some wrecks on the St. Marys River and other waterways in Camden County.

A letter dated June 23, 1838 written by a Captain Richard Floyd to Colonel W. Whig Hazard at Frederica, reported that two revenue cutters had visited the town of St. Marys that week (cited in Arnow 1955b:24). Apparently the officers on board the revenue cutters were tasked with eliminating smuggling through the port of St. Marys.

Ferries, Ferry Landings, and Boat Landings

Numerous ferries appear in historical records of Camden County. Ferries are frequently mentioned in secondary sources, in newspapers, and are depicted on maps. A query of the GNIS for historical sites returned several other listings for ferries. These included Burnt Fort, Kings, Mills, O'Quinn, and Wilds ferries (USGS 2006). Figure 22 shows an undated photograph of the Burnt Fort Ferry (GDAH 2006a). Ferry landings are often still visible in the modern landscape. Ferries are depicted on maps for the following years: Kings Ferry on the St. Marys River (King 1918), Burnt Fort Ferry on the Satilla River (King 1918), Mills Ferry on the Satilla River below Buffalo Creek (King 1918), and Owens Ferry (King 1918). Accounts below detail ferries located on historical documents.

Figure 22. Burnt Fort Ferry (GDAH 2006a).

Owens Ferry was located on the Satilla River and appears on numerous historical documents. Its existence is verified as a place name on various maps. Figure 23 provides one example of the ferry on a historic map (Central of Georgia Railway 1899).

Ferries operated at this location under a variety of names, including Cattleford, Leman's, Mill's, Brown's, and Ivanhoe (Barefoot 2001:29). Historical documents suggest that when the ferry was called Brown's Ferry, the Old Post Road "cut out to it" (Arnow 1955a:43). Construction of the Old Post Road was ordered in 1792 to extend from Liberty County, through Glynn County and to St. Marys. It was completed by 1802 (Arnow 1955a:43). Brown Ferry appears on a 1829 plat (Figure 24). The plat shows a dotted line labeled "Post Road to Brown Ferry". The road ends at the bank of the Great Satilla River, which is where the ferry apparently was located. Brown's Ferry is mentioned on an 1831 plat and connects the post road in Camden County to Fort Barrington across the Satilla River some distance (CCSC Deed Bk A&B, Bk B:15).

Boat landings are depicted on several plats. These landings probably served smaller vessels and vernacular watercraft. Several landings are depicted on the Little Satilla River, with some

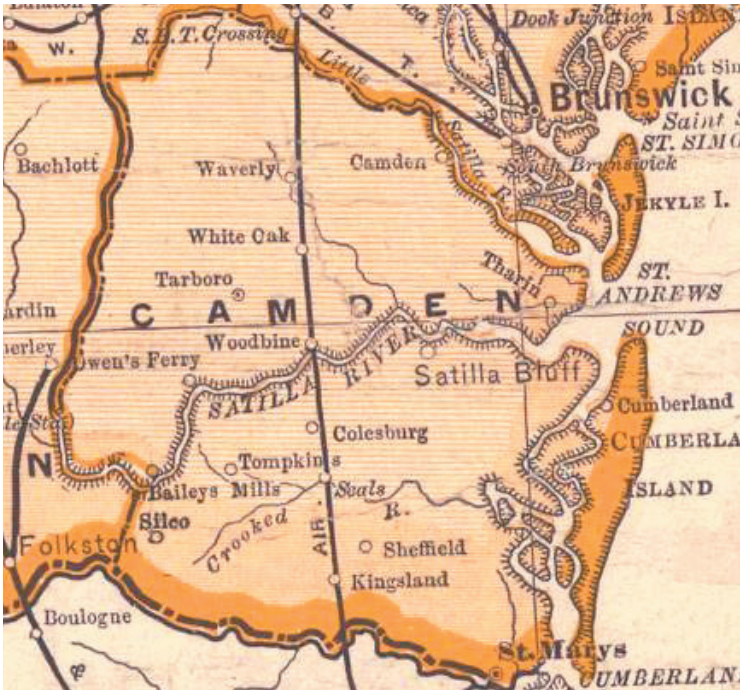

Figure 23. Owens Ferry in 1899 (Central of Georgia Railway 1899).

being on bluffs (CCSC Deed Bk AB:back cover). Other boat landings along an unmarked waterway are depicted on a different plat (CCSC Deed Bk H:i).

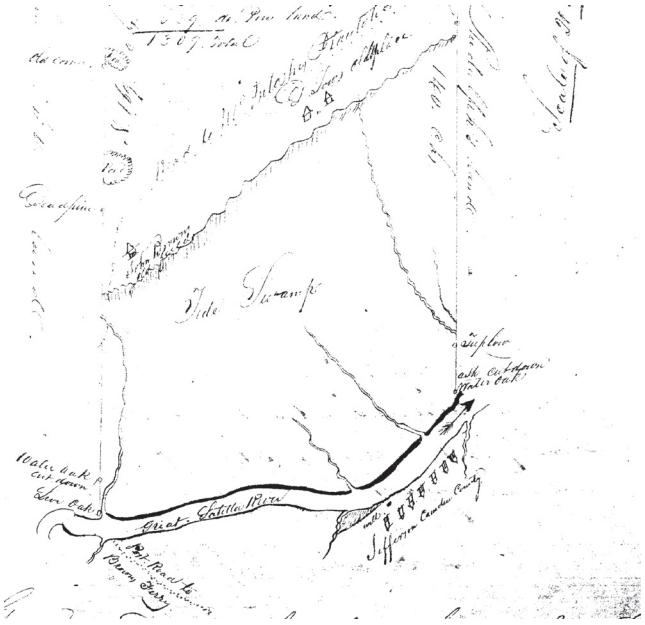

Figure 24. Browns Ferry (CCSC Deed Record A&B, Bk B:9

Sailing Vessels

Camden County saw a great deal of sailing ship activity in the early 19th century, including that related to trade with Spanish Florida, the slave trade, and to the War of 1812. Historical accounts mention a variety of rivercraft in the county. In 1803 U.S. Army engineer Andrew Ellicott journeyed on the St. Marys as part of a scientific party compiling data. He notes, "The 23d we left the town of St. Marys, and proceeded up the river as far as it was navigable for the United States Schooner, and then made use of canoes until an end was put to our navigation on the 6th of February by drift wood, logs and other impediments" (Ellicott 1803:276).

Historians suggest that extremely large numbers of square rigged sailing vessels plied the waters of the St. Marys River between the United States and Spanish Florida (Bullard 1983:26). During the War of 1812 vessels in the British squadron anchored in the Cumberland Harbor (Bullard 1983:26). Historic photographs provide vivid imagery of the masted sailing vessels that graced Camden County. Such photographs illustrate that the dock at St. Mary's served sailing vessels into the early 20th century (Barefoot 2001:18).

Steamboats

Steamboats served to move passengers and goods to various locations and Camden County enjoyed steamboat traffic prior to the introduction and growth of the less geographically constrained railroad. Steamboat traffic was restricted to waters deep enough and straight enough to be traversed by such vessels. In Camden County this included the Satilla and St. Marys Rivers. Steamboats visited Camden County as part of the Cumberland Route, which served Brunswick, Georgia and Fernandina and Jacksonville, Florida (Barefoot 2001: 28).

In 1838 the Brunswick Advocate newspaper reported that three new steamers were navigating the route from Savannah to Brunswick, St. Marys, and then to Florida. These vessels included the Forester, Captain Drake, and Isis (Arnow 1955b:23). The Hildegarde was one steamboat operating on this route. This photograph shows the Hildegarde in the 1920s (Figure 25).

In 1903 the steamer C.H. Evans plied the Brunswick and Satilla Route, transporting both passengers and freight. The vessel first stopped at Jekyll Island before steaming up the Satilla River to docks at Ceylon, Satilla Bluff, Halifax, Woodbine, Refuge, Owens Ferry, Clark's Bluff, Bailey's Mill, Silco, and Burnt Fort (Barefoot 2001:30). During the mid-nineteenth century the Steamer Planter plied the St. Marys River as far as Kings Ferry, while the Steamer Welaka also traveled the St. Marys (Crypt 2006).

Other steamboats functioned in less-glamorous rolls. S.L. Burns & Company owned its own small fleet of steamboats that included the Flora Temple, the Shepard, the Athlete, and the Gladiator (Arnow 1955b:25). The company used these steamboats to tow logs to their St. Marys sawmills during the second half of the 19th century

Figure 25. The Steamer Hildegarde on the right (GDAH 2006b).

(Arnow 1955b:25). The firm also put the boats to work towing sailing ships from the Atlantic to wharves where they could be loaded with yellow pine from their sawmills. The company then towed the loaded vessels back to the Atlantic Ocean.

In 1878 an American vessel, the W.R. Steamer Reliance left Fernandina, Florida and was bound for Savannah, Georgia via St. Marys. The young vessel was only six years old and was piloted by Thomas White of Savannah and a crew of twenty. The $25,000 ship was owned by the estate of Arthur Morgan of Georgetown, South Carolina. On September 5, 1878 the Reliance was carrying six passengers and $1,000 worth of general merchandise when at 11:15 p.m. the boiler exploded two and a half miles below St. Marys on the St. Marys River. The explosion entirely destroyed one boiler and left little more than the heads of the other boiler. In addition, one engine was destroyed and the other dislodged from the force of the explosion. Worse yet, four people died in the disaster. These included the Chief Engineer, William Moultrie; the 2nd Mate, Robert Dardis; the Oiler, Isaiah Armstrong; and the Mess Boy, George Whitemore. A total of eight others were scalded in the explosion, "2 of them dangerously" and all sent to Savannah Marine Hospital. Another injury occurred when a passenger dislocated a hip. That person was sent to the Savannah City Hospital.

It appears that this wreck did not sink, but was salvaged when the "…citizens of St. Marys, with small boats and two tugs of Fox & Burns..[towed]…the wreck to St. Mary's wharves" (n.a 1878). Apparently in spite of this salvage effort, a significant amount of the wreck remained. One year later, on September 6, 1879, the city council gave the owner, Dr. Carter, until the middle of the month to "remove the wreckage from the River" (Arnow 1955a:9).

The introduction and widespread growth of the railroad resulted in the decrease and ultimate demise of steamboat traffic in Camden County. Unsuccessful attempts to bring the railroad to the port of St. Marys occurred as early as 1856, followed by proposals in 1871, 1882, and 1887 (Barefoot 2001:33). The last steamboat constructed in St. Marys was reportedly the Mascot, built in 1889 and brought to Jacksonville for the addition of machinery and deck housing (Arnow

1955b:25). In the early 1900s the city granted property for the Waycross Air Line Company and by 1908 passenger service was established on a line with ever-changing names. Interestingly, railroad operations centered on the St. Marys' waterfront, in a railroad office and turntable that operated in the vicinity of the docks that once served steamboat operations (Barefoot 2001).

Sunken Craft (prehistoric through mid-twentieth century)

Historical accounts and archaeological data provide examples of types of shipwrecks and geographical locations likely to contribute to wrecks. Nineteenth century St. Marys' City Council Minutes document some such information, as cited in a local, mid-twentieth century newspaper series published in the Camden County Tribune (Arnow 1955a; 1955b). Some wrecks were the results of accidents while others were intentionally scuttled during wars. Wreck reports document three examples, of undoubtedly many, shipwrecks near St. Marys. Some of these resulted in sunken vessels and others were salvaged after the wrecks (n.a. 1876, 1878, 1894).

Secondary reports of historical documents suggest a wreck on Cumberland Island of a vessel in 1796 that had been manned by blacks from the West Indies. Apparently the crew members were held prisoner in St. Marys after their vessel sank (Arnow 1955b:23).

The wreck of the Brig Galley Margaret in 1796 occurred on the sand bar off Cumberland Island. The Margaret left Liverpool, England in August with a cargo of dry goods bound for Charleston, South Carolina. Out of England the pilot was "dismissed" and the leaky vessel was blown off course by unfavorable winds. The vessel came to the coast of Georgia on October 22 in a heavy gale, with the ship plying to windward. The unexpected length of the voyage left the crew with little food and water. Captain McNeal of the Schooner Dolly supplied the hungry crew with bread and pork, but rough seas didn't allow the transfer of water "of which we [crew] were almost destitute". Over the course of many more days, through October 26 the crew and vessel stood the onslaught of gale force winds. By October 27 the desperate crew decided to try to cross the bar into the St. Marys River. The buoys marking the channel were up and the pilot,

"...finding it impossible to clear the land, night coming on and blowing strong we attempted to run in the channel apparently clear with breakers on each tide. Between six & seven fathoms water at 4 p.m. in three fathoms low water & sand-bottom the vessel struck & carried away her rudder & drifted immediately up on the sand bar or breakers. The pumps had been continually going at 4 o'clock p.m....found four feet water in the hold. The vessel laying hard a ground & the tide flowing in her. At 6 o'clock a.m. –on shore at Amelia Island got assistance from the Spanish garrison stationed there & with great labour & hazard took the people from the wreck"
(CCSC Deed Bk B&C:312-313).

On October 28, the Collector of the Customs went on board the wreck and consigned it and the cargo to James Seagrove, Collector of the Customs for the port of St. Marys. The crew took measures to save the cargo during the next three days. On November 2, 1796 the remaining cargo and the vessel's hull were sold at public sale.

Storms were responsible for many shipwrecks. Council minutes report that the schooner, L.T., was driven ashore Cumberland Island and sunk after being beaten to pieces by a great storm on August 22, 1806. One death was attributed to the wreck. A Miss Maria Innes Osborne was washed overboard and her body never recovered. Osborne was traveling to join her mother, Catherine. Her father was Judge Henry Osborne, an original proprietor of St. Marys (Arnow 1955a:52; Arnow 1955b:23). Sixteen survivors of the quick sinking vessel spent 11 days drifting in what appears to have been a life boat without any food or method of propulsion. They were finally saved by a brig traveling from

"Campeachy" to St. Marys (Arnow 1955b:23). Given the time of year, the storm responsible for the wreck was likely a hurricane.

A hurricane in August of 1810 resulted in the loss of the brig Susan. The vessel struck the St. Mary's bar and quickly sank. While no one drowned, the cargo of cotton bound for Glasgow was damaged (Spence 1984:348).

The wreck of Navy Gunboat No. 2 was described in the Charleston Courier newspaper and later cited in Spence (1984:358-359). The vessel, described as a schooner rigged, was in sail to St. Marys from Charleston, South Carolina. On October 4, 1811 it reached Cumberland Island and a pilot was sought to navigate the vessel through the harbor and inlet. Meanwhile during that night and the next day, a storm or likely hurricane brought increasing gales which,

"took in the trey sail, and in about five minutes after a heavy sea broke on board, which hove the boat on her beam ends – they [the crew] immediately attempted to cut away the mast, but that part of the crew which was below, in their alarm, forced open the hatches, which had been secured early in the gale and the gun-boat instantly filled and went down. Several of the crew attempted to save themselves from instant death by clinging to the floating sweeps, spars, etc. but one only of the number escaped…" (Charleston Courier, October 21, 1811 as cited in Spence 1984:358). The one survivor of Gunboat No. 2 also had survived the sinking of the Gunboat No. 157. The remainder of the occupants of gunboat No. 2 included a captain, nine officers, 25 crew, and a civilian woman traveling to reach her husband (Spence 1984:359).

The October 5, 1811 hurricane was responsible for multiple other shipwrecks, as well as that of Gunboat No. 2. These included the ship Mary, which was in the river and driven onshore at St. Marys. Captain Forbes of New York was in command and did not expect to be able to remove the vessel (Spence 1984:59). Another shipwreck from the storm was the Superiour. This vessel was under command of Captain Coffin, of Bath. In spite of the same circumstances as the Mary, the Superiour was expected to be returned to the river for sailing (Spence 1984359). Another wreck from the October 5 storm included the ship Baltic. Portsmouth's Captain Adams, however, was able to remove the vessel from the riverbank after the storm and put it back into the water (Spence 1984:359).

An uncategorized, yet obviously severe hurricane in September 1813 was responsible for massive shipwrecks in Fernandina and St. Marys. In the latter town, an eyewitness reported, "…The harbor was clear, while the city and adjacent shores were filled with shipping" (cited in Arnow 1955b:21). Specific casualties of this hurricane included Gunboat No. 164. It sunk in the storm at St. Marys. A total of 20 crewmembers of the vessel died. A revenue cutter also sunk with two men on board (Arnow 1955b:21). The 1824 hurricane was so bad that the Darien Gazette stated that afterwards the beaches were covered with wrecks (NOAA 2006). Tropical storms also wrought damage to ships. The tropical storm of October 5, 1899 slammed the 552 ton schooner John H. Tingue onto the beach of Cumberland Island (NOAA 2006).

Military vessels abounded in and around the waters of Camden County during the War of 1812. Gunboats like No. 64 were part of a push by President Thomas Jefferson to defend young America's coastline. St. Marys was a vital defensive port at this time, defending America from Spanish Florida immediately to the south and from overseas attack as well. This role placed St. Marys third port in line in the number of gunboats commissioned for her defense. She was slated for 11 gunboats, supplemented by additional vessels later (Navy League 2005). As a result of both the abundance of vessels sailing under flags of various nations, the circumstances of war, and even hurricanes, a number of these ended their military service as shipwrecks.

Currently, Michael Higgins is working on a project to locate Gunboat No. 161 and Gunboat No. 164. His research is part of a project entitled, The Search for U.S. Navy Gunboats No. 161 and No. 164, proposed by The Navy League of the United States Golden Isles and Kingsbay Councils (Navy League 2005). Both gunboats were sunk at St. Marys in the Category 3 hurricane of September 16-17, 1813. The hurricane sunk three Navy Gunboats and ran two aground. Three gunboats were re-floated or repaired (Navy League 2005). The exceptions to recovery were Gunboats No. 161 and 164. Gunboat No. 161 was built in 1810 in Charleston, South Carolina. There were no casualties in the sinking. Gunboat No. 164 was built in Beaufort, South Carolina in 1810. Twenty of the crew of 26 perished in its sinking (Navy League 2005).

Another example of a shipwreck during the War of 1812 period was a Spanish schooner owned by the government and detained by the H.M.S. Dragon on January 7, 1815. The schooner wrecked in the breakers of the treacherous bar of St. Marys (Spence 1984:396).

Military and war-related shipwrecks also resulted from the Civil War. Some wrecks occurring during the Civil War were not caused by hurricanes or enemy fire, but rather by the treacherous and complicated topography of the inlets, harbors, and bars around St. Marys and Cumberland Island. For instance, the British schooner, Antoinette ran aground on the beach "about halfway down" Cumberland Island on December 8, 1863. The vessel hailed from Nassau and the captain and four crewmembers escaped. The vessel, however, was a complete loss. Salvaged attempts were limited to saving the vessel's anchors, chains, and sails (USWD 1864:174).

In 1876 a Spanish vessel wrecked near St.Marys. The vessel was likely a Bark or Barkentine by the name of Rosa del Turia. The ten year old vessel was registered in Valencia, Spain. She left St. Marys and was bound for Malaga, Spain. The ship sailed under her master, Gregorio Feuellos of Valencia and a crew of 17. They took on no passengers, only a cargo of yellow pine lumber measuring 344,000 superficial feet valued at $5,200.00. The cause of the wreck on May 21, 1876, was described as, "…Pilot in charge of tug putting his wheel the wrong way and pulling the Bk [bark/barkentine] out of the channel after the shoal water was passed…" (n.a. 1876). The vessel stranded at a location of "1000 feet N.N.E. of turn buoy No. 4 and bearing N. by E. fro Amelia Island Light" (n.a. 1876). The 611 ton vessel valued at $30,000 was deemed a total loss, along with its cargo. The morning after the wreck assistance was given by two tugs provided by S.L. Burns & Co. for "…taking Ship Stones, Sails, Boats, running rigging, etc. to St. Marys, Ga." (n.a. 1876).

Another recorded wreck was that of the "Steam Prop" Corinne. She was an American vessel grossing just under 34 tons. The four year old vessel was enrolled at St. Marys, where her owner, E.A. Stone lived. The steamer had a master, John R. Hardee and crew of four. The Corrine was bound from St. Marys to Brunswick when she caught fire and burned up on midnight on December 8, 1894. The cause of the fire was unknown, but by the time it was discovered, the sleeping master and engineer barely had time to escape. The vessel burned extremely quickly in mid-stream of the St. Marys River, opposite the town of St. Marys. The $5,000.00 vessel was insured for $2,000.00 and deemed a total loss. There were no passengers and no cargo on board (n.a. 1894).

A historical account of a wreck published initially in 1897 reported that a Spanish vessel, the Amelia, sunk in the St. Marys River after being "split in twain" (cited in Arnow 1955a:72). Captain Samuel Flood's daughter, Miss Elizabeth Cooper Flood, stated that, "…The day after the storm, a float was erected and sent out to where she [the Amelia] lay…and one cannon was brought back, not two... (cited in Arnow 1955a:72).

The steamboat, Atlantic was a 105 foot vessel that burned and sunk at Burnt Fort (Barefoot 2001:28). The 95 ton vessel burned in 1928 "near John Clark Buie's store and turpentine still behind Burnt Fort Store" (Barefoot 2001:74). The store clerk cut the lines and the Atlantic drifted across the Satilla River where it burned.

The GASF contains one documented historic shipwreck in Camden County. Site 9CM239 was recorded on the beach of Cumberland Island where it was exposed at the high tide mark. Archaeologists noted that the sternpost, keel, bow, and some of the planking and decking were visible. They ascertained the wreck to be an oyster sloop of vernacular construction that might date to the late nineteenth or early twentieth centuries. The site was recorded in 1999 by Dean Wood of Southern Research (GASF 9CM239 1999). It may have been mentioned previously in Ehrenhard's 1976 report of sites on Cumberland Island.

Ballast and Jetties

Ballast consists of heavy objects used in the hold of vessels to provide enough weight to stabilize the vessel. Ballast often consists of rocks found near a port city and can be either useful or a navigation hazard. European ballast stones made their way to Georgia and other coastal Atlantic areas during the eighteenth and nineteenth centuries. Vessels acquiring heavier loads on the eastern seaboard of North American did not require as much ballast, and these rocks were unloaded in order to take on lucrative cargo. Timber harvested from Camden County frequently replaced the ballast stone in vessels sailing back to Europe (USDA 1980:2).

Ballast stone was a useful commodity in areas such as Camden County and other portions of the Coastal Plain where native rock was virtually non-existent. Chatham County is a good example. Several streets in the port city of Savannah are paved with European ballast stone. The stone was also used in along the coast in construction of buildings, jetties, and cribbing. Surplus ballast discharged along harbors and in rivers and creeks, however, often presented navigational hazards. Some discharges were done with forethought, while others resulted from dire circumstances in which ballast discharge was an attempt at saving a vessel in peril.

Ballast stone sites occur in Camden County and some are documented in the historical record. St. Marys' City Council Minutes report good and bad issues related to ballast stone. The minutes state that in the summer of 1880 a T.W. Dexter from Brunswick purchased a pile of ballast from the city for use on Cumberland jetties (Arnow 1955b:9). The good use of ballast stone was offset by other occasions, such as the actions of E. Faulkner, of the bark Romax. Faulkner was fined $100.00 for discharging ballast in the river (Arnow 1955b:9).

The Cumberland jetties were constructed in 1880 in an effort to restrict the water flow between Amelia and Cumberland Islands. It was hoped that this restriction would increase the water pressure, thereby creating a deeper channel that would allow the passage of increasingly common deeper-draft vessels through the Cumberland Sound. The firm of Blaisdel & Greely was awarded the construction contract (Arnow 1955b:5).

Jetty design consisted of sinking pine log rafts into specific locations and holding them down with large stones. Arnow previously mentioned that ballast from St. Marys was used in the jetties. His work, however, later noted that "…the rock was brought to Fernandina, Florida by rail, there being no railroad to St. Marys, where it was loaded onto large lighters and towed down to Cumberland Bar" (Arnow 1955b:5). It is likely that both are true, as the jetties underwent three different contracts before they were completed. Work ceased when government funds were exhausted and a second contract was let around 1884 to the firm of Green & Gaynor. Reportedly, brush from Point Peter was used in bundles to hold the rafts underwater. This deceptive attempt was soon recognized in spite of a conspiracy

between the firm and the U.S. Army Corps of Engineer Captain assigned to oversee the work. Final construction was successfully completed from 1890-1893 by the Chicago firm of Chistie, Lowe, Haywood & Ludley (Arnow 1955b:5).

These jetties served their purpose and were particularly useful to the growing deep-draft vessel traffic entering St. Marys inlet during World War I. The Cumberland Jetty is recorded in the GASF, but with scant information. It is listed as Site 9CM110 and has UTM coordinates. The only other information is a note under "Published Record" listing John Ehrenhard's 1976 report, presumably the National Park Service survey he did at that time. The site form includes an extract of that report that cites historical documentary information about the jetty.

Shipyards

In 1837 visitor Mr. I.C. Stiles reported that there were more vessels constructed at St. Marys than any of Georgia's other ports (cited in Arnow 1955b:23). This included the large ships Agnes, Bolton, Citizen, Edward, Jane, and Oglethorpe, built from the many live oaks found in the area (Arnow 1955b:23).

Wharves, docks, warehouses, and related industries; Waterfronts

Wharves and docks varied in size and use. Plantation docks were smaller, yet integral parts of the plantation economy. The docks linked the outlying plantations with the rest of the world economically and socially. Plantation exports were loaded onto vessels at these docks, allowing shipment of agricultural products to the port of Savannah and then indirectly to Caribbean and European ports which produced the necessary bank notes and credits to profit the plantation owner. These docks also allowed the importation of manufactured goods and other items that could not be produced at the plantations. Plantation docks also allowed boat traffic to transport people, including willing visitors and enslaved Africans and African-Americans brought without consent. A 1786 plat shows John Ferrie's 6,000 acre plantation on the St. Marys River. The plat delineates the plantation area, including a nearby "Dock Landing" situated near a bend in the tributary to the St. Marys River (Figure 26.)

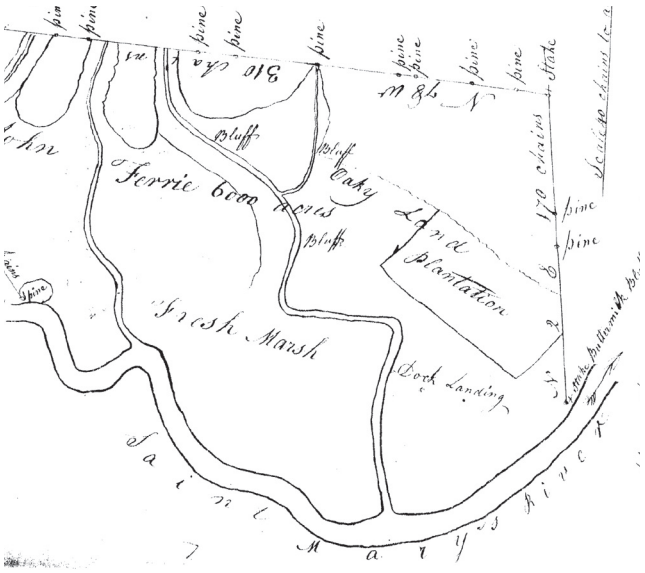

Figure 26. Plantation dock landing (CCSC Deed Record A&B, Bk A:158).

The GASF has a listing for an historic wharf in Camden County. Site 9CM237 is the Cumberland Wharf on Cumberland Island. The site was initially recognized by John Ehrenhard during a National Park Survey in 1976. It was revisted by archaeologists with Southern Research in 1999. This site was actually listed as "submerged", with part of the structure above and part below the water line. In 1999 Dean Wood noted that, "The wharf consists of seven wooden piers and some of the decking still standing in shallow water off the beach" (GASF 9CM237 1999). It was noted that the ruins were likely the most recent reconstruction of the wharf and not the original built in the 1890s.

Other non-plantation docks, such as city docks, were larger, provided for greater amounts of commerce, and served a more varied range of vessels. A map of the town of St. Marys multiple wharves that were organized in sections of four lots each (Figure 27). The town of St. Marys had wharfs along the St. Marys River from the town's

establishment throughout the present day. Many urban docks were tied to expanded waterfronts that began as industrial areas and slowly became recreational places for residents and tourists.

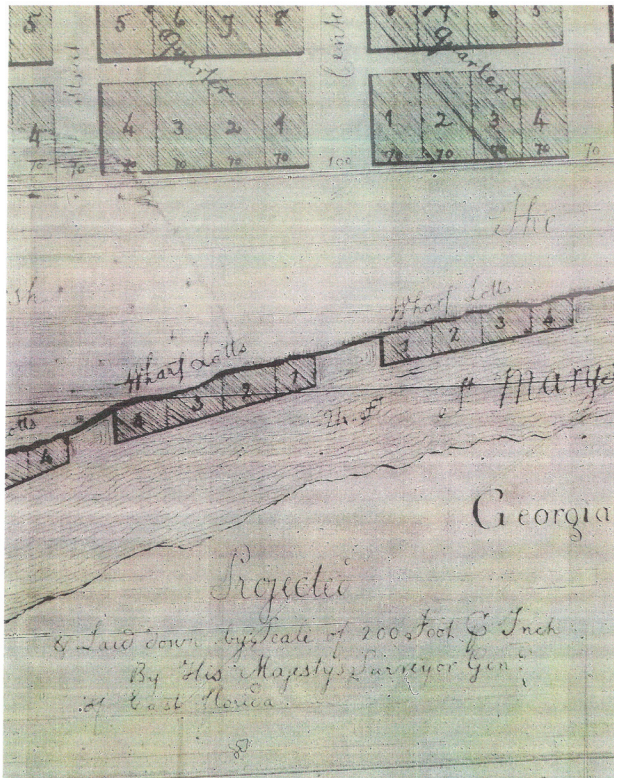

Figure 27. Wharf lots at St. Marys. (Colonial Office Records 1763).

The port of St. Marys provided many necessities and amenities related to riverine trade. The docks of the town provided a necessary place for vessels to tie up before, during, and after loading agricultural products and unloading merchandise. One such dock was located at the foot of the city market, serving small boats that brought in produce to sell from the surrounding countryside (Arnow 1955b:24). This dock was located between the wharves used by the Bessent and Doolittle warehouses during the end of the nineteenth century (Arnow 1955b:24).

Some waterfronts and docks have been recorded in the GASF for Camden County. Site 9CM221 and Site 9CM225 were located on the waterfront in the town of St. Marys at an elevation of approximately 2 m above mean sea level. The properties front the St. Marys River. A survey of this waterfront area, known as the Millers Dock Property, by Carolyn Rock produced ceramics and bottle glass from the late 18th to early 19th centuries (GASF 9CM221 and 9CM225 1989). One would expect artifacts to be associated with activities on the lots such as businesses and shops, in addition to artifacts associated with the loading and unloading of vessels tied to the dock along the waterfront.

As the focus of port cities, waterfronts are the hub of economic activity. While modern ports have undergone resurgence in waterfront activity by incorporating recreation and leisure time activities into these areas of town, such a focus is also historical. As early as 1918 St Marys constructed a waterfront pavilion for community social and cultural gatherings such as dances. This pavilion was dismantled in 1963 and replaced in the 1970s (Barefoot 2001: 26). New construction of an entire park in 2001 indicates that the focus of the riverfront for community entertainment has remained strong throughout the 20th century and into the 21st century.

Non-Ferry River Crossings (Bridges, Fords, and Shoals)

Bridges

Camden County's numerous waterways eventually begat bridge construction. The oldest bridges were constructed of wood and later ones of metal. An 1830 plat of Fairfield House plantation in Camden County depicts a road cutting through the center of the field from a creek to the mouth of a smaller tributary. The plat says, "At the request of laid out a tract of land known at a bridge…" (CCSC Deed Record A&B, Bk B:12).

Many bridges were built in areas that were initially traversed by ferries. Some areas have seen the construction of numerous replacement bridges in the same general locations. An example of bridge construction and use is apparent in the Satilla River Bridge. The construction of the

Atlantic Coastal Highway (Highway 17) resulted in modifications to the original 1912 route of the Old Dixie Highway in certain places. Construction in 1927 of a new Satilla River Bridge replaced an older toll bridge on the route (Barefoot 2001:95).

Yet another new bridge across the Satilla River was constructed in 1953 in Woodbine. It replaced a wooden, two lane bridge on Highway 17 (Barefoot 2001:99). A GNIS query revealed one historical bridge site, that of Red Bridge. The 1931 State Highway Map of Camden County shows that bridges had become quite common by this period, replacing many ferry crossing and dotting the new State and Federal highway route through Waverly, Woodbine, and Kingsland.

Fords, Shoals and Unidentified Crossings

Historic plats show several instances of creek or river crossings not associated with ferries on smaller tributaries. These plats do not label the crossings as bridges, although there might be bridges there. It is possible that some or most of these crossing are at fords or shoals where pedestrian, horse, and even wagon crossings might have been possible in these shallow areas. A 1787 plat depicts the "Road to McGirts Ferry" as crossing "Bailies Branch" on James Finley's 1,000 acres (Figure 28).

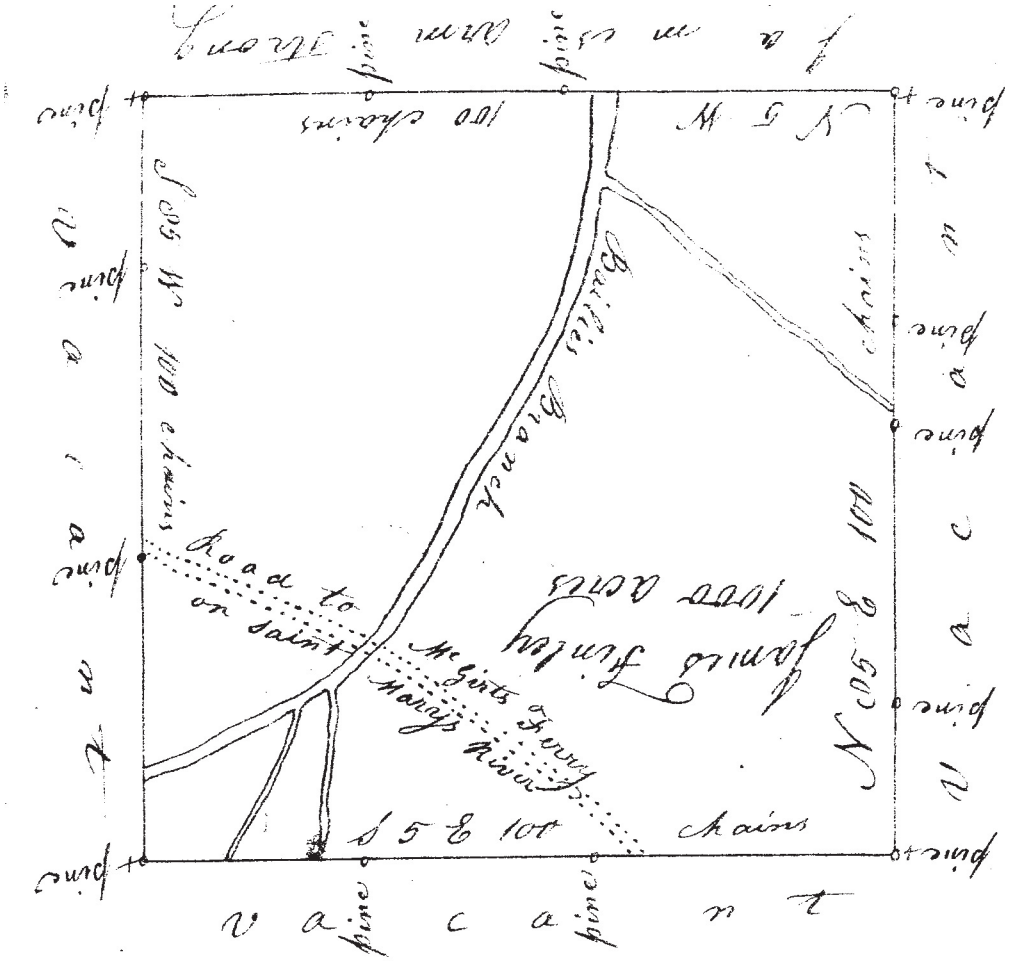

Figure 28. Road to McGirts Ferry. (CCSC Deed Record A&B, Bk A:171).

IV. Submerged Sites Research Plan and Recommendations

Examples of Plans in Selected Southeastern States

Numerous programs and projects in other nearby states and limited work in Georgia provide examples of survey and research plans for documenting and investigating submerged sites. This work consists of limited study areas rather than survey at a state-wide level. Study areas range in size from regional surveys, to investigation of limited sections of waterways, to examination of portions of multiple drainages and tributaries. This delimited study level provides a direct comparison with a county-level survey proposed for Camden County, Georgia.

One survey project evolved out of the need for, and development of, a management plan for submerged sites. This was a project of the Lighthouse Archaeological Maritime Program, known by the acronym, LAMP. The project consisted of a survey throughout St. Johns County, Florida. The project evolved into a multi-year effort that initially sampled the widest variety of environments that might have submerged sites. These areas included "..offshore and inlet areas, tidal river system and associated marshes and creeks, interior creeks and the St. Johns River system" (Robin Moore, personal communication, August 3, 2006). Various techniques were used during the survey, which were appropriate for the different environments of the county. These techniques and the sites recorded during the multi-year survey provided the foundation for the management plan created thereafter. The management plan attempted to integrate the survey data, including methodologies used to locate sites, specific environments and the cultural resources one might expect in each, and a broader interpretation of the history and prehistory of the region based on the submerged sites in the county identified during survey. The project was deemed a success by archaeologists who participated in it and management personnel who came later (Robin Moore and Kathy A. Fleming, personal communications, August 3, 2006). The challenge now appears to be the integration of the management plan into real-life management practices (Robin Moore, personal communication, August 3, 2006). Like many counties in various states, St. Johns County has not embraced its responsibilities regarding the management of submerged sites and inundated landscapes. The management ideas of the State of Florida do not include some site types and certain development situations. As a result of the lack of any one knowledgeable and empowered government agency managing inundated resources, LAMP often fills the gap as a pro-bono management consultant to the state and watchdog for the resources (Robin Moore, personal communication, August 3, 2006). Examples include spurring the state to require archaeological monitoring during dredging for beach re-nourishment projects. LAMP routinely makes its site data and reports available to the state for the use as a tool in management decisions.

Another Florida project was the Pensacola Shipwreck Survey initiated in 1991. This state funded program recorded over 40 significant archaeological sites. The project was a regional pilot program undertaken to explore the potential of a state-wide underwater survey. The program's research design included the collection of data for the development of a management plan, historical research, oral informant data collection, underwater investigations, remote sensing, development of a computer database for potential targets and verified sites, site evaluation and recommendation, and the development of a site classification (in Elliott 2003:8).

Examples of regional surveys in North Carolina include some that were required as a result of Federal regulations and others generated by research grants (Jackson n.d.; Overon n.d.). The former consisted of a 35 mile survey of a section of the Cape Fear River, which flows through the state's south-central portion. The survey was conducted in advance of a proposed USACOE channel deepening. The survey employed both remote sensing work in the form of a magnetometer and side-scan sonar of priority areas (based on historical research), and diver investigation of 100 shipwrecks. East Carolina University conducted a regional survey over a four year period that included 50 linear stream bank and shoreline miles in the Pamlico drainage (Babits, Morris, and Kjorness 1995, Babits and Kjorness 1995, Kjorness and Babits 2000). Archaeologists used visual examination and a magnetometer to record 104 vessels, 7 prehistoric sites, 3 historic sites, and several transportation related sites. The underwater sites were not ground-truthed (Kjorness and Babits 2000).

The Port Royal Survey consisted of a systematic examination of Navy shipwrecks in the Charleston, South Carolina harbor. This regional survey was conducted by South Carolina Institute of Archaeology and Anthropology (SCIAA) funded by a Legacy grant from the United States Navy. Archaeologists conducted systematic survey, ground-truthed anomalies, and conducted historical research (in Elliott 2003:10).

Other South Carolina surveys have consisted predominantly of those conducted by hobby divers in selected areas of rivers favored as better diving locales. These include survey of sections of the Waccamaw River in which divers searched for rice barges and related features; portions of the Ashley River in search of archaeological sites along its banks; and sections of the Cooper River. Projects in the early 1990s included investigation of specific areas of three plantation waterfronts. The goal of this project undertaken by the Charleston Underwater Archeology Office of SCIAA, however, was focused more on the documentation of four barges rather than a general waterfront survey (Harris 1992). Another project that was more survey-oriented included a 1993 survey of the west branch of the Cooper River. This project was undertaken by SCIAA (Harris et al. 1993).

Georgia has had limited underwater survey projects in its boundaries. These surveys have targeted select areas of rivers, lakes, harbors, or coastlines. Some riverine surveys have been conducted in Georgia's inland waters. In 2001, archaeologists with Southern Research Historic Preservation Consultants conducted a riverine survey that examined 14 miles of the Ichuawaynochaway Creek and 11 miles of the Flint River. The survey consisted of canoeing the project area and conducting visual inspection of both banks of the watercourses and the waterway bottoms (when visible and occasionally with mask and snorkels). Scuba diving in selected limestone sinkholes within the waterways was less successful at locating submerged sites. The project was conducted at the request of the Joseph W. Jones Ecological Research Center on its vast holdings within its facility in Baker County (Elliott 2001). The survey located a total of 49 sites and 23 isolated finds.

Other inland water riverine surveys include work on the Chattahoochee River, near the city of Columbus. Underwater archaeologist Gordon Watts undertook a project for the museum known at that time as the James W. Woodruff Jr. Confederate Naval Museum (Watts 1982). His reconnaissance survey consisted of a side scan sonar and magnetometer survey in an effort to locate shipwrecks. Another survey project in the Chattahoochee River by Watts was designed to investigate the gunboat C.S.S. Chattahoochee, but survey also recorded numerous rows of pilings from the Confederate Navy Yard in Columbus (Watts et al 1990). Other survey involving the Chattahoochee River included remote sensing on part of it, as part of a larger survey including the Apalachicola River (Gibson 1979). Another inland survey was undertaken in 1987 of

the submerged late eighteenth century town of Petersburg, Georgia (Elliott 1988). This survey was conducted on a portion of the submerged townsite located under Clark Hill (now Strom Thurmond Lake), at the confluence of the Broad and Savannah Rivers in Elbert County, Georgia. Archaeologists used visual survey while scuba diving to locate the site and the relict river channel in order to record it on modern topographic maps.

Archaeologists have examined submerged sites along Coastal Georgia waterways and offshore. Much of this work has concentrated on the Savannah River and harbor area as a result of federal compliance work. Survey in Chatham's County Back River, near Savannah, documented vernacular watercraft wrecks, ships, and resources associated with plantations (Wood, Leech and Cook 1994). The Fig Island Channel was examined during a data recovery project in the Savannah harbor in 1995 (Hall). Work by Gordon Watts examine coastal Georgia wrecks under the U.S. Navy's jurisdiction and plotted these on a geographic Information System (Watts 2004). He contracted with Georgia's Archaeological Services Unit of the Historic Preservation Division, Georgia Department of Natural Resources.

National Park Service Resource Manager for Cumberland Island, Mr. John Fry, mentioned hearing about an underwater survey in Camden County. He stated that a university in Florida did preliminary remote sensing survey in a boat looking for evidence of the Fort William site (John Fry, personal communication, August 12, 2006). The web sites for the University of West Florida and Florida State University did not mention this project. Further information regarding this project could not be located by the time this report went to press.

Most recently, HPD directed a maritime archaeological survey of portions of the Ogeechee River near its mouth. That study, which was contracted to archaeologists with Panamerican Consultants, was a research project funded by the National Park Service's American Battlefield Protection Program. The study identified many submerged anomalies and a number of these were investigated by scuba divers. Most notably, the wreckage of the Rattlesnake was mapped and its current condition assessed.

The wreck of the CSS Georgia continues to get attention from the scientific community and the public. Recent underwater investigations sponsored by the USACOE, Savannah District have assessed the condition, location, and size of the various pieces of the vessel. The USACOE continues an on-going dialogue regarding the vessel remains, the need for Savannah River/harbor dredging, and ultimately the removal of the wreck to a conservation facility and then exhibit locale.

Threats to Submerged Sites in Camden County

- Development
- Looting
- Poor or No Management
- Erosion

Like most of Georgia's coastal counties, Camden County cannot escape the tsunami of development taking over the coast. The establishment of Kings Bay Submarine Base in the 1980s was the first glimmer of large-scale growth coming to the area. Most recently, large scale residential development in the Point Peter area mirrors the massive influx of residential suburbia in many areas of the south. Other signs of increasing residential development of the area can be seen in the land around St. Marys. Residential development spurs commercial development of shopping centers, convenience stores, storage buildings and other service-sector industries. In coastal areas, residential development also spurs wharf, dock, boat ramp and marina construction. Such construction impacts submerged, inundated, or water-related archaeological sites.

Coastal submerged sites may take an even harder hit from looters than sites elsewhere in the state. Offshore sites are located in high-visibility water,

unlike the tannic waters of inland lakes and rivers. Coastal historic sites are generally older than those elsewhere in the state, and contain older artifacts that are often perceived as more interesting or more valuable. Coastal areas lend themselves more often to water-related sports such as scuba diving. This tendency, as well as the longer period of good diving weather and warmer waters, may make sites along the coast more attractive to looters. One diver boasts of looting artifacts from the St. Marys River over a 12 year period. Some of what he and others have removed from submerged archaeological sites includes the following: at Colerain, "nine pound solid shots, a bayonet and colonial pottery"; at St. Marys, "Spanish pottery dating to the 16th and 17 centuries…18th century English rum bottles"; at Kings Ferry, "Spanish coins dating between 1773 and 1794"; at the Brickyard, "projectiles from the Revolutionary and Civil Wars"; and at Orange Bluff, "hundreds of clay smoking pipes...scores of patent medicine bottles" (Tower 1983:102-106). Commercial salvage divers have allegedly brought in barges and explosives to collect, scour, and blow up these submerged sites in an effort to profit from the artifacts (Tower 1983).

Coastal Georgia counties may face the same challenges as St.Augustine's LAMP Project, in that no county or state agency or other legitimate policy enforcer has taken a permanent stand on managing the area's wetlands and protecting its submerged cultural resources. Many of Georgia's counties, especially rural ones, have weak county governments and no ordinances supporting archaeological preservation or mitigation. County leadership is often ignorant of the potential for archaeological resources--both terrestrial and underwater—to be located in their county. This lack of awareness cannot foster a preservation ethic. Lack of knowledge, lack of ordinances and penalties, and lack of policing and enforcing preservation ordinances and laws allows and enables an environment where dredging occurs illegally, looting is ignored or encouraged, sites are routinely destroyed for development and the public remains ignorant of the permanent and wholesale destruction. In 1983 looters reported, "Fish and Game officials from Florida and Georgia patrol the river…In the past they have helped my partners and I locate sites for diving and have no objection to artifact recovery" (Tower 1983:106). Education and enforcement of existing laws is key to submerged site preservation.

Goals of a Submerged Cultural Resource Survey of Camden County

A survey of inundated or submerged sites in Camden County should meet identifiable goals. These goals should include:

- Location
- Identification
- Evaluation
- Recordation & Site Recommendations
- Study
- Preservation
- Public Education

Sites can be located using a combination of historical data, oral interviews, archaeological survey, predictive modeling, aerial and satellite photography, and remote sensing when feasible. While canoes proved to be an easy to use and maneuver tool for archaeological survey of portions of the Flint River and Ichauwaynochaway Creek in Baker County, a different vessel type might prove more useful to survey archaeologists in Camden County. The coastal breezes dominating Camden County, and the tidal nature and frequent lack of downstream currents in coastal creeks hamper the effective use of canoes as a survey vehicle. Motorized small craft, such as Jon boats, may serve as a better survey vehicle in this environment.

Site identification during survey projects often ranges from broad generalities of "prehistoric or historic unidentified" to sites identified to specific phases of cultural periods; or to the specific date of the sinking of a vessel. Diagnostic identification of submerged or inundated sites can be more problematic. This difficulty stems from the

poor visibility in most of Georgia's non-offshore waters and from the fact that unlike terrestrial survey, underwater survey usually does not have the equivalent of shovel tests to retrieve and identify diagnostic artifacts in the early stages of investigation.

Like site identification, site evaluation of underwater sites can be difficult in early stages of survey. Sites undergoing current threats are often more readily evaluated, as their disturbances can be more visible and more distressing. Minimal site evaluations can be made at an initial survey level, however, that are based on environmental factors such as erosion or silting; man-made factors such as looting; site characteristics such as site type, date, associations and other items that don't require a determination of National Register eligibility status. Additional investigation beyond the survey level can often provide such eligibility determinations.

Recordation Recommendations

The current GASF database identifies few submerged or inundated sites. This is a result of two factors. The first factor is the nature of the site form used to compile the database. The form has only two choices for non-terrestrial sites, "submerged" or "lake flooded". Technically the former should cover sites that are underwater and the latter should cover sites flooded by a lake. These two categories are inadequate and non-representative. Many of the sites illustrated in this Camden County report are terrestrial sites with a component that is either submerged, partially submerged, or submerged during high tides. The term, "submerged" therefore, is either inappropriate or unclear. The other category "lake flooded" is technically only applicable to sites flooded by lakes or the construction of reservoirs, and not by other bodies of water such as rivers, creeks, or oceans. The second factor inhibiting the recordation of submerged sites is the mind-set of the archaeologists who complete the forms. Among the vast majority of sites that have a terrestrial and a submerged component, archaeologists typically ignore, or don't recognize, the latter. Even sites that are fundamentally riverine by nature and function are not recorded as submerged or flooded and the sites get lost in the terrestrial database. The Camden County GASF research, for instance, located site forms for the following: a rice plantation with canal and dikes; a mill site whose planking "…at high tide … was no longer visible"; and a fort site that was described as being mostly in the marsh and regularly inundated by changing tides (GASF 9CM291; 9CM224; and 9CM 242). None of these were recorded as submerged or flooded sites. Only a systematic search of every single dot on the database map and its corresponding site form revealed all three of these sites in this example. Clearly submerged site research for this project and previous such research (Elliott 2003) shows that the current system is not adequate for developing a reliable submerged site database.

In tandem with the above problem is the related one of site recommendations. Submerged components of terrestrial sites are most often ignored when site recommendations are made. While the submerged component may have better integrity, be less damaged from looting, and have better preservation of organics, it is often overlooked when recommendations are made for further work or for site preservation. Undoubtedly the two reasons for this are the lack of recognition of the submerged component and the lack of ability or familiarity in dealing with a submerged site. Neither should be the cause of submerged site destruction.

Submerged and inundated sites, whether they are partially, chronically, or continually wet need to be recorded and treated in the same manner as a terrestrial site. This includes completion of a site form (either current one as is, or modified by GASF personnel and archaeologists working in the state of Georgia) with the acknowledgement of its underwater or submerged nature. Likewise, recommendations for such sites should not be based on familiarity or comfort with working in a submerged or inundated site environment, but on a site's true integrity and informational value.

Study
The compilation of a county-wide survey of inundated resources can serve as an invaluable management tool. This tool can aid a wide audience including county planners and policy makers, developers, environmental scientists, ecologists, cultural tourists and their benefactors, and archaeologists. A submerged sites survey of Camden County can serve as a pilot project that can be adjusted, improved and used on counties throughout the state and region.

Preservation
The survey will help preservation of our submerged cultural resources on two levels. First, the recordation of sites will at the very least extract minimal information as sites are being destroyed at an increasingly alarming rate. This information can be used for basic settlement pattern questions and to provide information on sites that might be worthy of further investigation. Secondly, the documentation of sites can be used to get the preservation message as the general public learns about submerged sites and their importance.

Public Education
Educating the diverse public is key in researching and preserving archaeological sites. An educated public means that everyone from children to policy makers know about submerged site issues and that many of them want to support good policy on a personal, civic, and professional level.

Strategies to Reach Survey Goals
It is unlikely that survey of all of Camden County for submerged or inundated sites can be conducted at once. The level of funding necessary would most likely prohibit this. Such a survey could be conducted in the following manner:

- Multi-Year Investigation
- Select one major tributary.
- Select one secondary tributary.
- Select specific marsh areas to study.
- Select study area along coastline/offshore
- Target areas most likely to be impacted by increasing development.

Research Design and Research
A survey project will require the development of appropriate research designs for each area of study within the county, using past, current and new research. Historical research to-date can be further refined and expanded upon. For example, researchers gathered historic plats for this project that depict submerged sites. These plats need to be tied to the modern landscape through either the deed record via chain of title work, or through various historic and modern maps

Survey would benefit from additional oral interviews with divers, shrimpers, boaters, and others who are familiar with Camden County's waters. (This effort would expand on the initial efforts by Carolyn Rock). Consultations between archaeologists and geologists working in marsh and off-shore areas along the southeastern coast may help determine techniques and locations most likely to recover cultural data in good context.

Field Techniques

All sites, whether they be in a river, tributary, marsh, or ocean, require the use of standard, professionally recognized site documentations. Site documentation should include determining locations through global positioning satellite (GPS) readings, completion of field notes, taking photographs, making scaled sketch maps, and site form completion.

Rivers and Tributaries
These areas may be explored by the use of a shallow draft jon boat or similar craft with a motor to do visual reconnaissance of banks and bottoms, supplemented by pedestrian bank survey and snorkeling. Consider sampling portion of Great Satilla River with remote sensing tools such as magnetometer and side scan sonar.

Marshes
Marshes offer one of the greatest challenges to archaeological investigation - changing tides, a muck environment, too little water for diving and often boating, too much water for shoveling and screening. Ironically, this environment is most likely to contain a greater concentration of early man sites than most other site environments. The preservation of organic materials is also likely to be much better on these site types. The very limited amount of investigation into marshes has revealed that sites do exist in marshes and they can be excavated archaeologically by trained professionals.

Coastline/Offshore
Boats equipped with remote sensing tools such as magnetometer and side scan sonar work well to locate submerged sites such as shipwrecks. These tools should be used in tandem with historical research and with diving to ground-truth anomalies. Archaeologists should use data from shrimpers, divers, fishermen, and conservationists to survey areas where prehistoric or historic artifacts were recovered.

Projected Outcome of Survey

- Growing database of submerged sites for improved management of resources- to serve state and federal stewards of underwater resources (HPD, USACE)
- Model Program for Other County-Wide or Regional Submerge Sites Surveys within the state of Georgia.
- An engaged, educated and enlisted group of preservationists consisting of the lo cal diving and non-diving community as stakeholders and stewards of sub merged site protection

Possible Funding Sources
Coastal Zone Management (CZM) Grants
Coastal Zone Management Programs are funded through federal money awarded by the National Oceanic and Atmospheric Administration (NOAA). Michigan has used CZM funds combined with matching funds in the past for underwater survey work (Elliott et al 2000:23). The report containing this appendix is an example of funding received from a Coastal Incentive Grant (CIG) to investigate archaeological sites in coastal Georgia counties.

Other Federal Funding Sources
A variety of states have used federal sources to fund investigation of underwater archaeological sites. Virginia has received National Park Service funds. South Carolina has benefited from Department of Transportation funding. The Department of Defense, U.S. Navy Legacy funds has supported underwater archaeology in Florida and South Carolina. While Legacy funds are not always for underwater archaeological survey, such funding did support a survey of portions of the harbor of Charleston, South Carolina (Elliott et al 2000).

Possible Partnerships
Institutions of higher learning may be able to offer in kind help in return for internships and public relations opportunities. While most colleges and universities will not be able to provide trained underwater archaeologists, or even students majoring in archaeology or certified in SCUBA diving, these institutions can provide other useful resources. Traditionally, universities and colleges have available labor (untrained and trained), computer hardware and software, libraries, and equipment. Colleges in Camden County, southeastern Georgia, and in Jacksonville, Florida are geographically close and might be able to provide general support not linked to technical archaeology needs.

Offshore underwater survey and scuba diving components of tributary survey will require un-

derwater archaeologists working with divers. The limited number of such professionals in Georgia will require either a combination of forces from a variety of arenas, or funding for the hiring of professionals from a university or Cultural Resource Management firm.

The number of universities offering underwater archaeology programs has increased during the past two decades. These programs enroll graduate students needing thesis projects. Underwater survey and investigation of sites in Camden County's waterways would offer a diverse array of projects suitable for graduate student study while providing documentation of the resources. Some of these universities include the University of West Florida, Florida State University, East Carolina University, Texas A&M, and Brown University. College and university programs related to riverine and oceanographic research might also be potential partnership material as the natural and cultural environments directly impact each other. Examples of topics that might be related closely enough for mutual beneficial partnerships include the University of Georgia's program of study on Gray's Reef, and studies by various universities of sea turtles on Cumberland Island, geological and geomorphological studies of marshes, continental shelf sediments, and prehistoric ocean levels.

Avocational organizations involved in ethical, underwater archaeological research provide another avenue of potential partners. This includes organizations such as the Maritime Archaeological and Historical Society (MAHS) located in Washington, D.C. MAHS provides underwater archaeology training to divers and underwater archaeology opportunities for projects being run by professional archaeologists. Within the state of Georgia, a small group of divers and interested people constitute the West Georgia Underwater Archaeological Society, a chapter of The Society for Georgia Archaeology. This group works in LaGrange, Georgia. Research gathered by these various organizations can generate a more complete data base for the county's underwater sites, which will in turn allow for better site management.

Partnerships with state and federal agencies can provide a system of documenting submerged or partially inundated sites, monitoring their status, and protecting them from threats. Many state and federal employees in positions to do so, however, are uneducated about these resources and the threats to them. A program to educate individual employees and the agencies as a whole would remedy this situation. Employees working in aquatic arenas in the fields of research, law enforcement, and environmental monitoring can provide first-hand base-line data on site locations, the effects of erosion, and the presence and frequency of looting or site vandalism. This information can be used to manage and protect Camden County's underwater resources better.

Summary Recommendations

Like most of Georgia's coastal counties, Camden County is in dire need of underwater archaeology management. Current funding and staff size of the Georgia Department of Natural Resources, Historic Preservation Division, Archaeological Services Unit (ASU), the state's only entity tasked with managing Georgia's underwater resources, is insufficient to cover the entire state, including Camden County. The ASU's relatively new Underwater Archaeology Branch is still an under-funded and understaffed fledgling. It is located at the Skidaway Institute of Oceanography on Skidaway Island, through a partnership with the Georgia State University Applied Coastal Research Lab. The Underwater Archaeology Branch of ASU seems a likely candidate to initiate and oversee a pilot submerged sites program.

In addition to the above mentioned challenges, many of the underwater resources in Camden County and throughout the state of Georgia lie on private or federal property. For these many reasons, it is recommended that a comprehensive program be initiated that can be replicated in every coastal county in the state. This replication would maximize efficiency, reduce cost, and

increase the effectiveness of management. Such a program could be initiated by a university or college, a non-profit organization, or a state agency. It could be a consortium of entities, with one organization taking the administrative, logistically, and management lead. Camden County would be the subject of the pilot program.

The program should contain the following elements.

- The initiation, modification and improvement of a Camden County inundated sites pilot pro gram that can be replicated in every coastal county in the state.
- The collection of data necessary to allow for site management of underwater or partially sub merged sites.
- The prioritization of a Camden County riverine and coastal survey based on areas in the county with the greatest threats of site destruction from increasing development, erosion, looting, and other significant factors.
- The education of potential partners and the use of partnerships to leverage data collection, research, education, and site stewardship.
- The education of local, state, regional, and federal policy makers on issues impacting coastal county inundated sites.
- The education of terrestrial archaeologists regarding inundated sites and terrestrial sites with partially inundated components, and how to record and make recommendations for such sites that include all components whether they be in water or terrestrial.
- The education of local city, county, and state law enforcement personnel on issues of site pro tection.
- The education of county residents, land and water users, and other stakeholders on issues re lated to inundates sites, their value, and the threats they face.
- The sharing of data with other scientists to further the goals of various related scientific fields.

The need for such a pilot program initiated in Camden County and applied to all Georgia coastal counties should be apparent from the statistics, anecdotes, and data in this report. The need is apparent. A solution is presented here. The challenge lies in the funding and initiative of an organization, agency, or entity willing and able to take the lead.

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