January 2012

Out of the Land of Forgetfulness: Archaeological Investigations at Bulow Plantation (8FL7), Flagler County, Florida

Rebecca Claire O'sullivan
University of South Florida, rosulliv14@mail.usf.edu

Follow this and additional works at: http://scholarcommons.usf.edu/etd

Part of the American Studies Commons, History Commons, and the History of Art, Architecture, and Archaeology Commons

Scholar Commons Citation
Out of the Land of Forgetfulness: Archaeological Investigations at Bulow Plantation (8FL7), Flagler County, Florida

by

Rebecca C. O’Sullivan

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Arts
Department of Anthropology
College of Arts and Sciences
University of South Florida

Major Professor: Thomas J. Pluckhahn, Ph.D.
Lori D. Collins, Ph.D.
Brent R. Weisman, Ph.D.

Date of Approval:
March 28, 2012

Keywords: Landscape Archaeology, LiDAR, Slave Cabins, Viewshed Analysis

Copyright © 2012, Rebecca C. O’Sullivan
This thesis is dedicated to my mom, for always being my biggest fan and to Keven for always being there for me when things got scary at around 11 o’clock at night. I truly could not have done it without your constant love and support. Thank you so much, it means the world to me.
Acknowledgements

First, I would like to acknowledge the members of my committee, Dr. Thomas Pluckhahn, Dr. Lori Collins, and Dr. Brent Weisman. Thank you for your support of this project. I would also like to thank my graduate advisor, Dr. Thomas Pluckhahn. Thank you for being supportive of me as a student but also for challenging me to think about things in new ways. Your guidance and suggestions were always appreciated and I think this thesis is all the stronger for them. Another special thanks goes out to Dr. Lori Collins and Dr. Travis Doering. Thank you so much for taking me under your wing and giving me the opportunity to work on this wonderful project. You provided me so many opportunities to learn and grow beyond what you had to, and for that I will be forever grateful. I would also like to thank Phil Werndli and the rest of the staff at the Florida Park Service for their help and support in this project. Thanks also to fellow USF grad students Liz McCoy and Bart McLeod for their help in doing the fieldwork for this project. Another big thanks has to go to Jeff Moates and Rae Harper over at the FPAN West Central office. Thank you for being a welcome distraction from the stress of grad school. Thanks also to Dr. James Davidson for inspiring me at your field school about what plantation archaeology, and public archaeology, can be. Your willingness to share your work at Kingsley Plantation was invaluable to me in writing this thesis. A final thanks goes out to the members of the USF Anthropology Department.
Table of Contents

List of Tables .................................................................................................................. iii

List of Figures .................................................................................................................. iv

Abstract ............................................................................................................................ vii

Chapter One: Introduction .............................................................................................. 1
  Aims and Purpose of this Study .................................................................................. 1
  About this Thesis ......................................................................................................... 6

Chapter Two: Historical Overview ............................................................................... 9
  John Russell .................................................................................................................. 10
  Charles Wilhelm Bulow .............................................................................................. 14
  John Joachim Bulow ................................................................................................. 17
  Post-Plantation .......................................................................................................... 27
  State Ownership ......................................................................................................... 29
  Previous Archaeological Investigations ..................................................................... 33

Chapter Three: Methods ............................................................................................... 37
  Background Research ................................................................................................ 37
  Landscape Archaeology and GIS ............................................................................. 37
  Pedestrian Survey ..................................................................................................... 39
  Landscape Archaeology and Aerial LiDAR ............................................................. 42
  Viewshed Analysis .................................................................................................... 47

Chapter Four: Theoretical Perspective ....................................................................... 51
  Plantation Archaeology ............................................................................................. 51
  The Archaeology of Landscapes ............................................................................. 54
  Landscapes of Power and Control ......................................................................... 62
  The Dialectics of Power ............................................................................................. 64

Chapter Five: Setting .................................................................................................... 68
  Environmental Setting .............................................................................................. 69
  Socio-Historical Setting ........................................................................................... 74

Chapter Six: Results ..................................................................................................... 82
  Historical Maps and GIS Creation .......................................................................... 82
  Pedestrian Survey .................................................................................................... 84
  Metal Prospection Survey ....................................................................................... 91
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>LiDAR Data</td>
<td>95</td>
</tr>
<tr>
<td>Viewshed Analysis</td>
<td>104</td>
</tr>
<tr>
<td>Chapter Seven: Conclusions</td>
<td>117</td>
</tr>
<tr>
<td>References Cited</td>
<td>126</td>
</tr>
<tr>
<td>Appendix A: Additional Figures</td>
<td>136</td>
</tr>
</tbody>
</table>
List of Tables

Table 2.1: Description of Bulow Plantation structures based on claims documents from the Second Seminole War .........................................................19

Table 6.1: Results of an analysis of lines of sight between the main house And the slave cabins ..........................................................111
List of Figures

Figure 1.1: The remains of the coquina sugar mill at Bulow Plantation.......................3

Figure 2.1: A map of John Russell’s, and later Charles Bulow’s, lands from the Spanish Land Grants ........................................................................................................13

Figure 2.2: Colonel Charles Wilhelm Bulow .....................................................................17

Figure 2.3: John Audubon’s illustration of the Tell-Tale Godwit from *The Birds of America*. ..........................................................................................................................21

Figure 2.4: 1883 Map of Volusia County and vicinity of Florida ........................................27

Figure 2.5: Cat-faced tree, with metal gutters still intact, recorded within the Bulow Plantation Ruins Historic State Park ..................................................................................29

Figure 2.6: Early twentieth-century postcard showing the ruins of the sugar mill at Bulow Plantation ..................................................................................................................30

Figure 2.7: Profile and planview of the Bulow sugar mill created in August of 1934 by Felix Benton ...................................................................................................................31

Figure 2.8: Map of the area surrounding what would become the Bulow Plantation Ruins Historic State Park ............................................................................................................32

Figure 5.1: Map of the East Florida area showing the location of the King’s Road, as well as important plantations and bodies of water. .................................................................70

Figure 5.2: Soil types found within Bulow Plantation Ruins Historic State Park ..................73

Figure 6.1: 1850 Plat map showing the boundaries of Bulow’s property ...............................83

Figure 6.2: 1893 Coastal Survey map showing the remains of Bulow Plantation .................84

Figure 6.3: Scatter of coquina blocks, most likely associated with the plantation era slave quarters, located in the area of the north arc. .............................................................85

Figure 6.4: Plantation era features recorded with sub-meter GPS during the pedestrian survey ..............................................................................................................................86

Figure 6.5: A more detailed view of the recorded plantation core area ................................88
Figure 6.6: 1853 Coastal Survey map of Kingsley Plantation

Figure 6.7: Comparison of old (Daniel et al 1980) and new (Collins et al 2010) survey data

Figure 6.8: Metal detector hits recorded in the area of SQ1

Figure 6.9: Metal detector hits recorded in the area of SQ2

Figure 6.10: Aerial photograph of the study area overlaid with GPS points recorded as part of the current survey

Figure 6.11: DEM of Bulow Plantation showing landscape features

Figure 6.12: DEM of Bulow Plantation with contour lines

Figure 6.13: Zoomed in view of area A indicated in Figure 6.12

Figure 6.14: Zoomed in view of area B indicated in Figure 6.12

Figure 6.15: Zoomed in view of area C indicated in Figure 6.12

Figure 6.16: 1893 Coastal Survey map overlaid with GPS points from the current survey

Figure 6.17: Results of a viewshed analysis looking from the slave cabins to the main house area, where the viewer height is set at 5.78 ft

Figure 6.18: Results of a viewshed analysis where the observation point is located at the main house and the viewer height is set at 15.75 ft

Figure 6.19: Lines of sight between the main house and the slave quarters

Figure 6.20: Ground surface profile and lines of sight from the main house to SQ1

Figure 6.21: Panoramic view from the main house area where viewer height is set to 5.78 ft

Figure 6.22: Panoramic view from the main house area where viewer height is set to 15.75 ft

Figure 6.23: The viewscape at Bulow Plantation
Figure A1: Ground surface profile and lines of sight from the main house to SQ2..............................................................................................................137

Figure A2: Ground surface profile and lines of sight from the main house to SQ3..............................................................................................................137

Figure A3: Ground surface profile and lines of sight from the main house to SQ4..............................................................................................................138

Figure A4: Ground surface profile and lines of sight from the main house to SQ5..............................................................................................................138

Figure A5: Ground surface profile and lines of sight from the main house to SQ6..............................................................................................................139

Figure A6: Ground surface profile and lines of sight from the main house to SQ7..............................................................................................................139

Figure A7: Ground surface profile and lines of sight from the main house to SQ8..............................................................................................................140

Figure A8: Ground surface profile and lines of sight from the main house to SQ9..............................................................................................................140

Figure A9: Ground surface profile and lines of sight from the main house to SQ10....................................................................................................141

Figure A10: Ground surface profile and lines of sight from the main house to SQ11......................................................................................................141

Figure A11: Ground surface profile and lines of sight from the main house to SQ12.................................................................................................142

Figure A12: Ground surface profile and lines of sight from the main house to SQ13.................................................................................................142

Figure A13: Ground surface profile and lines of sight from the main house to SQ14.................................................................................................143

Figure A14: Ground surface profile and lines of sight from the main house to SQ15.................................................................................................143

Figure A15: Ground surface profile and lines of sight from the main house to SQ16.................................................................................................144
Abstract

Developed in the early 1800’s, Bulow Plantation is a prime example of the thriving sugar industry of East Florida prior to the Second Seminole War. Additionally, the layout of the slave cabins at Bulow Plantation in an arc centered on the main house is unique in Florida except for Kingsley Plantation near Jacksonville, FL. Despite its importance and the paucity of information available about even basic questions regarding life at Bulow Plantation, relatively little in the way of archaeological work has been done at the site. Using historical research and non-destructive archaeological techniques such as pedestrian survey, aerial LiDAR (Light Detection and Ranging), and remote sensing completed as part of recent work by the Alliance for Integrated Spatial Technologies (AIST) (Collins and Doering 2009a; Collins et al 2010) this work examines not only the material landscape of Bulow Plantation but also the social and cognitive landscapes that might have shaped life for both enslaver and enslaved. Using data collected as part of AIST’s larger project (Collins et al 2010) an analysis of the pedestrian survey data, as well as a Digital Elevation Model (DEM) created from aerial LiDAR data, revealed the locations of several previously unrecorded slave cabins as well as some large scale landscape features. Although there are three competing theories as to why the Bulow slave cabins were arranged in an arc, without subsurface archaeology it is impossible to endorse one interpretation over another. While the analysis of landscapes generally
privileges the view of those in power, suggestions for future archaeological work are made so that the voices of those who were enslaved at Bulow Plantation can begin to be heard.
Chapter One: Introduction

The mill, as it stands, is not much to look at: some fragments of wall built of coquina stone, with two or three arched windows and an arched door…but [it] serves well enough the principal use of abandoned and decaying things, - to touch the imagination… I think of the stirring adventurous man who built these walls and dug these canals. His life was full of action, full of journeyings and fightings. Now he is at peace, and his works do follow him – into the land of forgetfulness.

- Bradford Torrey, *A Florida Sketch-Book*, 1894

Aims and Purpose of this Study

The crumbling remnants of East Florida’s plantations have inspired romantic visions for countless visitors to the area for decades, yet little is known about their exact layouts or their past inhabitants. Developed in the early 1800’s, Bulow Plantation (listed as 8FL7 in the Florida Master Site File) is a prime example of the thriving sugar industry of East Florida prior to the Second Seminole War. Due to this importance, Bulow Plantation, or Bulowville as it was also known, was listed on the National Register of Historic Places in the early 1970’s for its importance to the agricultural, military, industrial, and architectural history of the region. Now a part of the Florida Park System, Bulow Plantation Ruins State Park is located about 40 miles south of St. Augustine near Flagler Beach, Florida and is situated between Bulow Creek and the Old King’s Road.
Today, the most visible remnant of the plantation is the large coquina block sugar mill (Figure 1.1), but the foundations of the main house, slave quarters, and several other structures can also be seen throughout the park. Of particular interest are the slave quarters that are arranged in an arc around the road and main house, a layout that can only be seen elsewhere at Kingsley Plantation, north of Jacksonville, Florida. Despite the fact that as many as 46 of these small structures stood at one time at Bulow Plantation, for the unknowing visitor to the site today it would be easy to overlook their remains in favor of the stately coquina mill. Past subsurface archaeological work at the site has generally focused on the areas around the mill or main house as part of archaeological compliance or mitigation while several others have mapped the locations of the more ephemeral slave cabins (Wilson 1945; Stanton 1949; J. W. Griffin 1952; Gluckman 1967; Daniel et al 1980; Strickland 1980; Baker 1991; Baker 1999; Payne and Griffin 2001; Wayne et al 2001; Newman 2005; Collins and Doering 2009a; Collins et al 2010). These projects have been important in answering questions about the major structures at Bulow Plantation as well as the general layout of the plantation as a whole, but the story of what life was like for the enslaved population remains relatively untold.

One of the goals of archaeology is to give voice to those who were, for one reason or another, forgotten or omitted from the traditional narrative of history. While it is probable that both Charles and John Joachim Bulow manipulated their plantation landscape for the utmost personal gain, it is also probable that the people they enslaved resisted their control through multiple means. Through a critical exploration of the construction and manipulation of landscape at Bulow Plantation it is hoped that a new
light can be shed on lives of the people whose forced labor actually made the plantation successful. As stated above, the traditional view of the plantation south has been greatly romanticized in popular culture. At many plantation sites the harsh realities and inhumanity of slavery are omitted or downplayed, while “Gentleman Planters” are seen as giving their slaves care and some autonomy. In terms of public interpretation it is important to challenge popular views with critical interpretations as they serve to “dispel the dangerous notion that ‘slavery was not such a bad life’” and increase awareness of “the ways in which the power dynamics of American slavery operated in everyday life” (Chidester 2009:35).
This study is part of a larger project undertaken for the Florida Park Service (FPS), Department of Environmental Protection (FDEP), by the Alliance for Integrated Spatial Technologies (AIST) at the University of South Florida (USF) that aims to accurately record several of the historic sugar mills located on DEP property before further stabilization or maintenance can be conducted on them (Collins and Doering 2009a; Collins et al 2010). The impetus for this project came with the understanding on the part of State park managers that many of these important historical structures were beginning to deteriorate at a rapid rate. For example, at the ruins of the nearby Dummett Plantation damage caused by age, water intrusion, degraded mortar, as well as instability caused by unchecked tree root growth beneath the remaining wall of the structure led to a partial collapse in early 2009 (Collins and Doering 2009b). Before the collapse occurred however, the structure had been recorded by AIST using highly accurate terrestrial LiDAR, allowing preservationists to stabilize and precisely restore the structure at a later date. As part of the continuing plan of maintenance for the remains of the sugar mill at Bulow Plantation Ruins Historic State Park, park managers set the documentation of the Bulow sugar mill complex to HABS/HAER standards as well as the recording of past stabilization attempts as a priority (FDEP 2003:54).

In addition to the need to adequately document the more visible sugar mill structure, park managers have also set research and management goals regarding the archaeological resources within the park. First, the unit management plan for Bulow Plantation identifies the need for further research in order to regain baseline knowledge of known archaeological sites within the park. Next, managers highlighted the need for more research into the original layout of the historic plantation structures within the park,
with “particular attention…paid to any identified work areas or slave quarters from the plantations, to further our knowledge of this aspect of the park’s African American history” (FDEP 2003:54,73). The need for the survey and mapping of any features associated with the plantation era at Bulow Plantation using GPS technology was identified as being integral to the future management and interpretation of the site (FDEP 2003:73). Finally, in keeping with these goals for Bulow Plantation park managers indicated in the unit management plan that the entire cultural landscape, including “information about the historical development, significance, and existing character of a cultural landscape” (FDEP 2003:73), should be taken into account in order to aid in the maintenance and interpretation of the site. Based on these goals AIST researchers, USF Department of Anthropology graduate students, and FPS staff focused not only on the remains of the coquina block sugar mill but also on recording the much less visible remains of the other plantation structures through the use of historical background research, pedestrian survey, GPS recording, and remote sensing techniques (Collins and Doering 2009a; Collins et al 2010).

Based on these goals, the purpose of this project is to integrate various non-destructive archaeological techniques as well as historical documentation in order discover how social relations were manifested in the material landscape of Bulow Plantation, and as a consequence, East Florida’s sugar plantations in general. At the most basic level, where are the remains of the plantation buildings that once made up Bulowville located? Can any of these building remains be associated with a distinct function, for example: slave quarter, barn, kitchen, saw mill? How were these buildings situated in relation to one another? Given a better understanding of the spatial layout of
Bulowville, more theoretical questions regarding the dynamics of power and landscape can be explored. Considering many of the plantations in this region of East Florida were on the task system, how did the organization of labor and the need for control of the enslaved workforce shape the spatial layout of the plantation system at Bulowville? From a landscape perspective, how are these power relations evident in the size and spatial arrangement of plantation buildings at Bulow Plantation? Using historical background research and non-destructive archaeological techniques such as aerial LiDAR (Light Detection and Ranging), pedestrian survey, and remote sensing it is hoped that a clearer view of life at Bulow Plantation will emerge. It is also hoped that by testing the efficacy of these techniques that they might be applied to other understudied plantation sites throughout the East Florida region.

*About this Thesis*

Chapter Two gives an account of the recorded history of Bulow Plantation from its first owner John Russell to its final one, John Joachim Bulow. Although the nature of the historic record for this site means that much of this focuses on the three white men who owned the plantation throughout its history, when possible information about the enslaved population was also highlighted. In addition to this, attention was also given to the events that occurred in the area of Bulow Plantation after its destruction in 1836 until the property was acquired by the State of Florida in 1945 in an attempt to account for any changes that might have occurred in the landscape during that time. Finally, I discuss the previous studies conducted at Bulow Plantation in order to learn from what past researchers have discovered through archaeological projects at the site and to identify research questions that have not previously been addressed.
Chapter Three focuses on the methods utilized for this project. Examples of how each technique has been used in other archaeological projects as well as pitfalls and best practices learned from these examples are then identified and discussed. I then lay out each step in the process of the GIS based analysis I conducted for Bulow Plantation in hopes that future researchers can duplicate these methods at Bulow Plantation or other similar sites throughout the region.

Chapter Four expresses the theoretical perspective I take in trying to understand the cultural landscape at Bulow Plantation. A literature review of the archaeology of slavery and plantation life within the South and Caribbean is presented and a special emphasis is given to studies that examine the plantation landscape. Additionally, I include a discussion of the field of landscape archaeology in general, tracing its origins from the settlement pattern studies of Gordon Willey (1953) to the varied meanings of “landscape archaeology” present within the discipline today. Finally, I discuss the importance of power and power relations in understanding the archaeological record, especially in regards to plantation sites. Examples of archaeological studies that focus on such issues are highlighted and I explain the dangers of seeing plantation power relations as a one sided expression of control by the plantation owner.

Chapter Five is a discussion of the both the environmental and social landscapes that affected the development of the physical landscape of Bulow Plantation. Wide scale historical factors such as the development of the East Florida region and the effect this had on the plantation system in the area are discussed. Also, methods of control employed by plantation owners, and avenues of resistance employed by East Florida’s enslaved population, are explored.
Chapter Six details the results of the fieldwork and computer based analyses I completed as part of this project. The results of the pedestrian survey are presented and compared to features found in previous surveys. Also, I talk about the results of using remote sensing data to try to understand the past landscape, and viewshed, of Bulow Plantation.

Finally, Chapter Seven discusses these results in an attempt to address the questions posited above. I give suggestions for future research at Bulow Plantation and explain the ways in which the results of this study can be used to enhance the experience of future visitors to Bulow Plantation and increase awareness of the general public to the realities of life on East Florida’s slave plantations.
Chapter Two: Historical Overview

We turned down the broad avenue, once flanked by noble oaks whose scathed and blackened trunks and leafless limbs alone remained to attest their former magnificence. On either side were extensive fields, most luxuriant once with richest sugar crops but now presenting a scene in which the demon of desolation stalked with unchecked sway. On our left arose…the ruined arches and columns of the once stately sugar mill while before us lay a smouldering, ashy heap, the only vestige to show where once stood the hospitable mansion…

- Dr. J. Rhett Motte, Bulow Plantation, 1836 (from “Life in Camp and Field” quoted in Wilson 1945:239)

The early history of Florida was marked by many changes in loyalty: from Spanish, to British, to Spanish again, and finally to American. In 1783, Spain regained control of its colonies in East and West Florida from the British after their defeat in the Revolutionary War. The time from 1783-1821, also known as the Second Spanish Period, was marked by an influx of new settlers, many of whom were not of Spanish descent (Griffin 2003:166). Due to difficulties with attracting back Spanish settlers, who had fled the area for Cuba when the British took control from Spain 20 years before, some of the immigration restrictions were eased and non-Catholic settlers were allowed access to new lands. In the area south of St. Augustine, near what is now New Smyrna, many settlers with roots in England and Scotland came from the Bahamas to start a new life. Many of these new immigrants became wealthy through a new crop they had imported to the area
from the Bahamas: as observed by a writer of the time “the planters upon the Tomoka river and its vicinity are almost wholly English settlers from the Bahamas, who quitting those sterile rocks, came hither to avail themselves of better soil: all of them have prospered, and several have become very rich by raising sea island cotton” (Griffin 2003:167-168).

Almost thirty years after Spain regained control of its territories in Florida a new threat emerged to their power over the region. Having already seen the success of using American influence to destabilize and occupy parts of Spanish West Florida around 1810, a group of East Florida settlers, calling themselves Patriots, conspired to do the same in their region (Cusick 2007:1-2). By the spring of 1812 the Patriot War or Patriot Rebellion was in full swing and American sympathizers had already taken control of Fernandina and Amelia Island, settlements close to the Georgia border. A group of 200 Patriots continued to move south, reaching St. Augustine around the end of March 1812 and setting up camp in the remains of Fort Mose, just to the north of the capital (Cusick 2007:149). At the same time that this group laid siege to St. Augustine, smaller contingents of Patriot forces organized raids on the rich plantations to the south. Many of the white planters fled their lands for the relative safety of St. Augustine while their slaves abandoned the plantations to hide from the marauding Patriot forces (Griffin 2003:170).

John Russell

Into this uncertainty, in July of 1812 John Russell arrived in St. Augustine, along with his wife Mary, five children, and eighteen of his slaves, aboard the schooner
Perseverance (Florida State Archives [FSA], Spanish Land Grants [SLG] 6:2:4). Like many of the settlers in the area at the time, Russell, although a native of South Carolina, came to East Florida from the Bahamas where he had owned some land on the island of New Providence and worked as a shipwright. In his petition for lands, Russell says that he was told that the Spanish government of St. Augustine was in great need of a ship that could pass the shallow bar at the mouth of the harbor, but that because the royal coffers had been depleted he would be paid for it with land. As an additional benefit, Russell was told he would gain full title to lands immediately, while most settlers only gained full title after cultivating the land for ten years without interruption (FSA:SLG 6:2:5).

Before Russell could take possession of the land an appraisal had to be made of the vessel in order to determine whether its value was equal to that of the land being offered. Don Rafael Diaz, a master ship carpenter, and Don Miguel Acosta, the captain of the schooner St. Augustine, surveyed the vessel and appraised it for around $2600.00 on 15 July, 1812 (FSA:SLG 6:2:8-9). The ship was renamed the Barbarita before going into service at St. Augustine (FSA:SLG 6:2:15). On the 17th of July 1812 Russell’s petition for land was granted by the Governor, and 4,000 acres of land were given to him in payment for the schooner (FSA:SLG 6:2:10). In addition to these lands, Russell also asked for land in proportion to his family and the slaves he expected to import from his holdings in the Bahamas, although the emerging war between Great Britain and the United States made that difficult:

...during the War between Great Britain and the United States, it will be impossible for one to import in this province the rest of my Slaves, and considering the difficulty of exporting Negroes from Bahama Islands, I shall want at least twelve months from the time the said War is concluded to take away my slaves, and as I wish to
invest the greater part of my property in negroes, ... I am ready to deliver faithfully my vessel to the Government - Therefore I beg your Excellency to accede to this my petition and order a certificate of the document which will be drawn to that effect, be given to one to serve one as a guaranty. St Augustine of Florida 22nd of July 1812 – John Russell (FSA:SLG 6:2:11-12)

Despite gaining title to a total of 4,675 acres of land within the province of East Florida, Russell was never able to bring the rest of his slaves from the Bahamas to set up his new plantation. According to Wilson (1945:228), John Russell planned to name his new plantation “Good Retreat” but died in 1815 without ever having his new lands surveyed. There is little information as to his activities between 1812 and 1815 although Joseph Hernandez, acting as attorney for Russell’s estate, states that he suffered many obstacles in importing the remainder of his property to East Florida and was living in Fernandina at the time of his death (FSA:SLG 6:2:19).

According to Griffin (2003:171), the period from 1815 to 1819 was marked by a huge demand for the local surveyor as planters throughout the province of East Florida attempted to claim lands across the region. By early 1820 Russell’s lands had still not been apportioned, and when his estate’s administrators, his wife Mary and oldest son James, were finally able to have the boundaries surveyed in June of 1821 (Figure 2.1) it was found that four other settlers had already been granted tracts on one of Russell’s parcels (FSA:SLG 6:2:22). In order to prove that the lands then occupied by squatters were in fact the property of John Russell’s estate, local planters Robert McHardy, Francisco Pellicer and Joseph Hernandez were called to testify to the validity of Russell’s superseding claim to the lands (FSA:SLG 6:2:25-26). All agreed that John Russell had visited the area in 1813, after receiving title to the lands, and marked the boundaries of his grant with letters carved into certain trees.
Figure 2.1: A map of John Russell’s, and later Charles Bulow’s, lands from the Spanish Land Grants. Image courtesy of the State Archives of Florida, Spanish Land Grants.
Finally, on June 21, 1821, after almost nine years of waiting and bureaucratic wrangling, the land was finally surveyed and James Russell took possession of his inheritance:

…we went to the place aforesaid, riding about on horseback; and, taking said James Russell by the hand, I put him in possession of the lands referred to in my commission. There he called aloud, pulling up the grass, threw up sand in the air, broke branches of trees, and did other things indicating possession, which he took quietly and peacefully, and without contradiction (FSA:SLG 6:2:28).

Charles Wilhelm Bulow

In the summer of 1821, the Spanish province of East Florida was in the process of being ceded to the United States, making it even easier for American settlers to purchase lands in the region. A fresh influx of speculators was coming from southern states to purchase untouched lands in the old Spanish territory. Besides the change in allegiance, many planters in the area were also turning to new crops. With the development of steam driven mills, sugar production became somewhat easier and potentially more profitable than it had been in the past, although the initial investment of capital needed for this new crop was still great (Griffin 2003:171).

According to the dates on his gravestone, Charles Wilhelm Bulow (Figure 2.2) was born in South Carolina around 1779. He was one of three children born to Joachim and Amelia Bulow, and one of three siblings: an older brother John Joachim and a sister Anna Elizabeth (Charleston County Wills, Vol 25, 318-322). Charles Bulow’s father, Joachim Bulow, was a prominent figure in South Carolina history. After immigrating to the region from Germany he was credited as being the founder of the first Lutheran
church in the state; later he became a wealthy landowner and merchant (Griffin 2003:171; Charleston County Wills, Vol.25:318-322).

Charles Bulow married Adelaide Fowler Johnston and had two children, Emily Ann and John Joachim (Charleston County Wills, Vol 36:871-875). He became a successful businessman and South Carolina legislator, and “was said to have made a fortune in Charleston at the time of the embargo, which may have been a euphuism [sic] for speculation in cargoes of blockade runners” (Wilson 1945:230). He and his brother, John Joachim Bulow, went into business together in South Carolina for a time and are listed as living together in Charleston on the 1810 United States Federal Census. Both were also on the board of directors for the Charleston branch of the Bank of the United States before Charles moved to Florida in 1821 (Clark 1922:46-47).

With his lands finally surveyed in June of 1821 John Russell’s heirs seemed ready to quit the region entirely and in August of that same year his descendants sold the property to Charles Bulow, for $9,944.50 (Wilson 1945:230; FSA: SLG 6:2:58). In addition to the land he bought from the Russell family for his new plantation, Bulow also owned a house on Meeting Street in Charleston as well as a home on Marine Street in St. Augustine (Payne and Griffin 2001:82; Wilson 1945:230).

Upon arriving at his new property in Florida Charles Bulow quickly began making improvements, laying out the buildings necessary for a successful venture and getting his new plantation in order. It is unclear which plantation structures were built during this time period, however from the claims of Charles Bulow’s executors in the Spanish Land Grants, made only a few months after his death, it appears that many of the
structures were built during his lifetime. “Charles W Bulow immediately took possession of the said tracts of land and planted and improved a part of one of the tracts and erected buildings...[and after his death the executors of his will] still keep a great number of slaves on the said land employed in the cultivation of the cane” (FSA:SLG 6:2:65). The presence of a large number of slaves, along with the need to process the cane being cultivated suggest that buildings would have been erected quickly in order to house the large number of people being forced to work the fields. Whether these structures were of a temporary nature, or whether they were the more permanent slave quarters and outbuildings described at the site under John Joachim Bulow’s ownership, is still unclear.

Charles Bulow died in St. Augustine on May 7, 1823, only two years after his arrival to East Florida, and was buried in the Huguenot Cemetery. His obituary in the East Florida Herald described his “amiability of manners” and “worth of character” as earning him the respect and affection of many of his contemporaries. His recent accomplishments at his Florida plantation were also celebrated:

Col. Bulow had embarked a large capital in the cultivation of the cane, and having all the necessary resources for prosecuting the experiment upon an extensive scale, we have to deplore in his death, not only the loss of a highly valuable citizen; of an enterprising agriculturist whose success, would have given an impulse to the interests and prosperity of the territory. (East Florida Herald, May 10, 1823)

Charles Bulow left behind his teenage son John Joachim Bulow to continue the work of running the plantation, stipulating in his will that the land not be sold but instead administered by trustees until his son reached the age when he could take over the operation (Wilson 1945:231).
John Joachim Bulow

John Joachim Bulow was still only a minor when his father died, leaving him to inherit the family plantation. The younger Bulow was remembered by his neighbor James Ormond III as being educated in Paris and very well read but “very wild and dissipated” (Ormond 1941:6), and was described by the young soldier John Bemrose as being tyrannical and cruel to his slaves (Mahon 1966:12). Whatever John Bulow’s personality, Bulow Plantation prospered under his ownership through its crops of sugar cane and sea island cotton (Gordon 2002:211). This relative affluence was evident in the number and quality of the buildings located on the property, as well as the large number of people enslaved there. In the 1830 United States Federal Census, John J. Bulow was recorded as
having 193 slaves living on his property, only two of whom were over the age of fifty five. This was almost four times the number of people enslaved at neighboring plantations during the same time period, indicating that Bulow was one of the wealthiest planters in the area.

An inventory of Bulow Plantation’s structures as recorded in claims from the Second Seminole War (United States Senate 1846), along with their number, size, and construction material (where known) are listed in Table 2.1. Based on these figures, Bulow had approximately 30,844 square feet of enclosed space throughout his plantation. Slave quarters accounted for approximately 8,832 square feet of the total area, yet when divided by the number of people who inhabited those buildings (based on the 1830 United States Federal Census) it appears that each individual slave had only about 45 square feet of living space.

On Christmas Day, 1831, the famed naturalist and ornithologist John James Audubon arrived at Bulowville in search of Florida’s native birds. Audubon had first begun his exploration of the state at St. Augustine, then moving south to the plantation rich areas along the St. John’s and Tomoca Rivers. Although many of his contemporaries did not hold a positive view of him, as stated above, John J. Bulow made a very positive impression on Audubon during his short stay at the plantation (Wilson 1945). Audubon wrote several letters about his time at the plantation, and it is believed that his illustration for the Tell-Tale Godwit includes a partial view of Bulowville in the background (Souder 2004:273).
Table 2.1: Description of Bulow Plantation structures based on claims documents from the Second Seminole War (United States Senate 1846).

<table>
<thead>
<tr>
<th>Plantation Building Type</th>
<th>Number</th>
<th>Width (Feet)</th>
<th>Length (Feet)</th>
<th>Height</th>
<th>Construction Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sawmill House</td>
<td>1</td>
<td>20</td>
<td>60</td>
<td>Two Stories</td>
<td>Wood framed</td>
</tr>
<tr>
<td>Sugar House</td>
<td>1</td>
<td>89</td>
<td>116</td>
<td>12 feet</td>
<td>Stone</td>
</tr>
<tr>
<td>Corn House</td>
<td>1</td>
<td>25</td>
<td>36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Store Houses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kitchens</td>
<td>2</td>
<td>20</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stable</td>
<td>1</td>
<td>25</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slave Quarters</td>
<td>46</td>
<td>12</td>
<td>16</td>
<td>Wood framed</td>
<td></td>
</tr>
<tr>
<td>Gin House</td>
<td>1</td>
<td>42</td>
<td>42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cotton House</td>
<td></td>
<td>40</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Gin House</td>
<td>1</td>
<td>10</td>
<td>20</td>
<td>Two Stories</td>
<td></td>
</tr>
<tr>
<td>Engine House</td>
<td>1</td>
<td>14</td>
<td>25</td>
<td>One and a Half</td>
<td>Stone</td>
</tr>
<tr>
<td>Fowl House</td>
<td>1</td>
<td>20</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blacksmith’s Shop</td>
<td>1</td>
<td>16</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main House</td>
<td>1</td>
<td>42</td>
<td>62</td>
<td>Two and a Half</td>
<td>Stone and Wood</td>
</tr>
</tbody>
</table>

One such letter from December 31, 1831 included an interesting account of Audubon’s bird hunting expeditions while at Bulow Plantation. After setting out in a barque (a small boat with three masts) along with six slaves from the plantation Bulow and Audubon made their way down Bulow Creek to the Halifax River in search of Brown Pelicans. Apparently neither the pelicans nor the tide was willing to cooperate with this venture. Audubon was unable to catch the large number of birds he was hoping to find, and on the second day of the expedition the small boat became mired in the mud:

…and as the birds, generally speaking, appeared wild and few,— (you must be aware that I call birds few when I shoot less than one hundred per day) my generous host proposed to return towards home again… Our hands pulled well, and our barque was as light as our hearts. All went on merrily until dark night came on... We found ourselves fast in the mud about 300 yards from a marshy shore, without the least hope of being able to raise a fire, for no trees except palm trees were near, and the grand diable himself could not burn one of them (Proby 2002).
The entire crew of the small expedition spent a cold night in the marsh, and in the morning again attempted to remove the boat from the thick muck:

All hands half dead, and masters as nearly exhausted as the hands—stiffened with cold, light clothed, and but slight hope of our nearing any shore; our only resort was to leap into the mire, waist deep, and to push the barque to a point, some 5 or 600 yards, where a few scrubby trees seemed to have grown to save our lives on this occasion... the mire was up to our breasts, our limbs becoming stiffened, and almost useless at every step took...It took us two and a half hours to reach the point, where the few trees of which I have spoken were; but we did get there (Proby 2002).

After starting a fire and recovering for a while, the small party continued up the muddy shore until they reached the creek, and deep enough water to maneuver the boat. Their good luck did not last for long, however, and they soon had to abandon the boat and again travel along the shore on foot. Several miles of hiking finally brought the group to the outskirts of the plantation:

Well, through this sand all waded for many a long mile... until we reached the landing place of J. J. Bulow.— How my heart cheered up once more, for the sake of my kind host—troubled with rheumatic pains as he is. I assure you, I was glad to see him nearing his own comfortable roof; and as we saw the large house opening to view, across his immense plantation, I anticipated a good dinner with as much pleasure as I ever experienced (Proby 2002).

Following a brief side trip to another local plantation Audubon returned to Bulow Plantation, leaving again for St. Augustine on January 14, 1832 (Proby 2002:26-27).

There is no surviving documentary record of life at Bulow plantation from the time Audubon left the area until late 1835, and little is known about life there, for Bulow or the hundreds of enslaved people made to live on his plantation, during that time. The events that would provide the next opportunity for historical records would be those
related to the destruction of Bulow Plantation, the flight of its residents from the area, the
death of its young owner, and the attempt by his heirs to recoup some of the losses.

In his reminiscences of growing up near Bulow Plantation, James Ormond
remembered that the plantation owners in his area were on good terms with the
Seminoles, trading regularly for wild food-stuffs in exchange for manufactured goods:
They had plenty milk, butter, and eggs, but for fresh meats depended on the Indian hunters with whom we were on the best terms, and who kept them well supplied with venison and turkies, wild honey and coontie, or arrow-root – Besides which in the Fall they would come in with large droves of fat hogs and fat beeves and trade them off for blankets, homespun, powder, lead, red cloths, calico, beads etc. (Ormond 1941:5).

However, rising tensions stemming from the imminent removal of all Seminoles from Florida to a new reservation in Oklahoma soon boiled over throughout the state. With the attack by Seminole forces on a contingent of troops under the command of Maj. Francis L. Dade on December 28, 1835, the Second Seminole War had begun in Florida. Much like what had occurred during the Patriot Rebellion of 1812, the plantations of East Florida were again under attack from raiding parties, this time composed of Seminoles unwilling to be forced from their lands.

Although John J. Bulow, along with the other planters in the area, is said to have cultivated a positive trading relationship with the Seminole Indians living in the vicinity of his plantation, he could do little to stop what would happen when the Second Seminole War broke out (Wilson 1945:236). Bulow resisted the use of his plantation by the militia to fight the Seminole but when they arrived to commandeer his property on the 28th of December, 1835 he could do little to stop them. After leaving Rosetta Plantation due to a large Indian force in the area, Major Benjamin A. Putnam, commander of the 2nd Regiment, 2nd Brigade of the Florida militia (also known as the Mosquito Roarers), moved his headquarters to Bulow Plantation. Many of the residents of the other plantations in the area also fled to the relative safety of Bulow’s property in order to wait for an escort to St. Augustine (Griffin 2003:172). According to Putnam, “it was a large plantation, and quite open for a considerable distance all around, and the enemy could
scarcely approach without being seen” (United States Senate 1846:76), and this strategic location combined with its ample resources made Bulo ville an especially defendable location.

J.J. Bulow was not supportive of this decision, however, believing that he would be better able to defend his property, and avoid attracting the ire of Seminole forces in the area, without the presence of the militia on his lands. Major Putnam recounts in his testimony for claims after the war was over that the younger Bulow "objected to the troops occupying his place and manifested his opposition in a very decided manner. On our approach to his place he continued to fire upon us with a four pounder, charged with powder, with the expectation, I presume, of preventing our going to his place” (Wilson 1945:237). Apparently these warning shots did not have the intended effect, and Putnam’s forces took Bulow prisoner in his own home while the troops fortified the area around the main house and made use of the plantations resources (Payne and Griffin 2001:85). According to the Senate claims documents related to Bulow’s losses during the Second Seminole War, Major Putnam ordered him arrested and “confined in an outhouse on his own premises,” and when the militia was forced to leave the area under threat of attack Bulow was again punished by not being allowed to bring any of his belongings with him.

As planned, Bulow Plantation became the headquarters for the militia forces in the area from the end of December, 1835 to the 23rd of January, 1836, and several military expeditions were organized from the place. With the change in control came a marked change in the plantation landscape. Based on testimony from the claims documents, as well as on contemporary accounts from soldiers stationed there, multiple
plantation structures were pressed into service or fortified for military use including: “the dwelling-house, sugar-house, saw-mill, house and buildings attached to the sugar-house; also, the store-house as a depot for provision, the corn-house, two kitchens, and all the stables, and occasionally the other buildings, having at times a force at the station which required much accommodation” (United States Senate 1846:14). Using bales of cotton taken from the plantation, a breastwork was also constructed around the slave quarters as a means of defending the property (United States Senate 1846:12-15). Most significantly, an ad hoc fortification was constructed in front of the main house as a primary means of protecting the area:

I had a large breastwork constructed, about forty feet square, with angles at the corners; this was about ten feet high and made of large heavy cabbage logs. For getting out the materials and hauling them to the place I made use of the ox and horse teams of Mr. Bulow and his negroes, and had them thus employed for ten days and upwards. We were obliged to haul the logs from a distance. (United States Senate 1846:4).

The exact location of this fortification is still unclear although a later visitor to the plantation, a soldier stationed there several months after it had been largely destroyed, described the fort as being centered on “a fine well” and constructed of “palmetto logs…laid horizontally, and morticed in one another…[with] a terrace, or log platform for a sentinel to walk on” located to one side (Smith 1836:171). The remains of a square, stone lined well are still extant on the property, although it is unclear if this is the same well referred to in the above account.

After engaging in a skirmish with the Seminole forces just south of Bulow’s property at the Dunlawton plantation, Major Putnam recounts in claims documents (1846) that based on the overwhelming number of Seminole forces massing to their south
it was decided that his forces should withdraw to St. Augustine. On the night of January 23\textsuperscript{rd} 1836 Putnam removed his troops from Bulow Plantation. Several nights later, residents of St. Augustine reported seeing fire to the south of the city, in the area of Bulow Plantation. With the local militia gone and with the majority of the white population fled to St Augustine the Seminole had begun to burn the area plantations, especially those that had been occupied by government forces (Griffin 2003:172).

Several weeks later, in late February of 1836, a contingent of troops again occupied the fort at Bulow plantation. Although other contemporary sources report that all of the plantation structures were destroyed after Putnam’s forces left the area in late January of 1836, a soldier who was part of the group that re-occupied the place reported that while much of the plantation had been destroyed some structures were still intact:

The Indians had not burnt the negro houses, and every thing in them seemed to have been left untouched, since the hasty flight of the inmates. There was more corn in them than we could take away, and a good deal of useful negro furniture. There were a great number of these houses, as Mr. Bulow had upwards of Two hundred negroes – they surrounded the Fort in a semicircle, and were distant about 150 yards from it. As they afforded the Indians a fine screen to crawl up behind unseen, and a favorable position to make an attack from, we, at one time thought of burning them down, but did not, as we did not wish to create more destruction than the plantation had already suffered (Smith 1836:173-174).

Griffin (2003:172) also reports that while the Seminole destroyed many of the area plantations at the time, they usually spared the slave quarters. Whether they were destroyed after the initial military occupation of the site or subsequently is unclear. What is known is that when on the 1\textsuperscript{st} of April 1836 John J. Bulow gave a sworn statement of his losses in St. Augustine he claimed that all of the buildings that made up his plantation had been destroyed.
It is unclear what happened to the enslaved population of Bulowville after the plantation’s destruction and John J. Bulow’s death. It is thought that Bulow’s slaves, along with the other enslaved residents of the area, were taken to Anastasia Island to be held there until fighting was over (Griffin 2003:172). It is also likely that many slaves saw an opportunity to flee and either joined with the Seminole or became runaways. In Bulow’s claims documents overseer Francis Pellicer adds four enslaved people to the list of property lost to the Seminole, “Indians got possession of four prime negroes named George, July, Scipio, and Abraham” (United States Senate 1846:16). Whether these people were truly taken, or whether they saw their chance at freedom and took it is impossible to say. What is interesting is that this is the only reference to the names of specific slaves held at Bulow Plantation in all the historical documents relating to that place. Today, the two hundred or so other residents of the plantation remain nameless.

John J. Bulow did not live long enough to recoup his losses from the government as he died in St. Augustine on May 8, 1836 (Gordon 2002:213). It is unknown where he was buried, and some have suggested that instead of St. Augustine he had returned to Paris and died there (Wayne 2010:102). Whatever the case, based on plat maps made around 1850, by the time of his death John J. Bulow had amassed around 5,000 acres of land, making him one of the wealthiest land owners in the state before his property was destroyed.

Post-Plantation

Because John J. Bulow died without any children, title to his remaining assets, as well as any claims that might be paid out by the federal government based on his losses,
went to his sister Emily Bucknor and her children. Despite arguing for reparations for the destruction of the Bulow family plantation during the Second Seminole War for decades, these claims were ultimately rejected. By 1870 the remaining heirs of Emily Bucknor had divided the Bulow property into eight equal lots, one for each; although historical records indicate that little if any improvements were made to the respective properties during this time. By 1904 Bulow heir William Bucknor leased his property in Lot 2 (Figure 2.4) to a group of investors for the purpose of “boxing, working and otherwise using said timber for turpentine purposes” (FHS Bulow/Bucknor Papers, Folder 2, 20). The western half of Lot 2 covers most of what is now State property. In fact, remnants of the turpentine, or

![Figure 2.4: 1883 Map of Volusia County and vicinity of Florida. The land owned by C.B. Bucknor that was later leased for the production of turpentine is highlighted in red. Image courtesy of the Library of Congress, Geography and Map Division.](image-url)
naval stores, industry are still evident all throughout the State Park. During our pedestrian survey of the property we encountered several cat-faced trees along with numerous herty cups throughout the area (Figure 2.5), these were also recorded as part of the AIST survey (Collins and Doering 2009a; Collins et al 2010).

The use of pine trees for the naval stores industry undoubtably had some effect on the landscape of Bulow Plantation, but compared to what much of Florida was going through during the late nineteenth and early twentieth centuries the land remained relatively untouched. As evidenced by the map in Figure 2.4, and by the many early postcards featuring the site (Figure 2.6), the ruins of the old Bulow sugar mill were well known to the local population at this time. In fact, the old coquina ruins throughout what was once East Florida became a popular tourist destination for those travelling through the area from the late nineteenth century to the present day. The old ruinous coquina structures led many travellers at the time to romanticize the sites. In his *A Florida Sketch-Book*, published in 1894, Bradford Torrey wrote musingly about his visit to old sugar mill ruins in the vicinity of New Smyrna. As he writes in his travelogue, and as many people still believe today, there was a popular local legend that the old coquina sugar mills were actually Spanish missions from the time when Florida was populated with catholic friars and *conquistadors*. Despite the fact that this has been shown time and again to be false, the attractiveness of the myth means that it is unlikely to ever die out completely.

*State Ownership*

In 1945, Bulow Plantation was purchased by the Volusia Hammock State Park Association and then given to the Florida Board of Forestry and Parks to ensure its future
protection as well as its accessibility to the public (Wayne 2001:91). Little is known about the condition of the remaining structures prior to that time except for a report completed in 1934 by Felix Benton for the Florida Forest Service, a precursor to the current Department of Environmental Protection. Benton surveyed the area and made fairly detailed drawings (Figure 2.7) of the remaining mill complex at the Bulow site (Benton 1934), revealing a structure that was in relatively good shape considering its age,

Figure 2.5: Cat-faced tree, with metal gutters still intact, recorded within the Bulow Plantation Ruins Historic State Park.
the surrounding environment, and its partial destruction almost a hundred years earlier. Also, the map (Figure 2.8) he created of the surrounding area shows the location of several old roads and cleared areas that might have been related to the plantation era landscape.

Figure 2.6: Early twentieth-century postcard showing the ruins of the sugar mill at Bulow Plantation. Image from author’s personal collection.
Figure 2.7: Profile and planview of the Bulow sugar mill created in August of 1934 by Felix Benton. Image courtesy of the Florida Park Service (Benton 1934).
Figure 2.8: Map of the area surrounding what would become the Bulow Plantation Ruins Historic State Park. Possible plantation era roads are included. Image courtesy of the Florida Park Service (Benton 1934).
Previous Archaeological Investigations

Several archaeological projects have been conducted throughout the years at Bulow Plantation. In 1950 John W. Griffin conducted an archaeological excavation of the main house area in order to verify its location and determine its boundaries and created a drawing of what the house might have looked like during the time of the plantation (J. W. Griffin 1952). Based on this work, Griffin was able to determine that the first level of the house was most likely constructed of 18 inch thick masonry walls and that the fireplace would have been located in the center of the structure, not along one of its walls (J. W. Griffin 1952).

Other work in the area of the main house was overseen by Henry Baker in 1983 as part of a project by the Florida Division of Archives, History and Records Management (Baker 1991; Baker 1999). Baker’s work in the main house area uncovered domestic artifacts such as transferprinted wares, utilitarian stoneware, pearlware, pipestems, and faunal remains. Also, artifacts more closely related to farming activities such as tools, harness pieces, and a linch pin were also found in the area of the main house. Baker (1991:22) speculates that this might be either due to the use of the ground floor as a workshop or from when the house was fortified and occupied by the militia during the Second Seminole War. In the area of the sugar mill much of the archaeological work that has been conducted has been related to mitigation of construction projects around the structure. In 1966 excavations were conducted around the mill in areas where a new sidewalk was to be installed, several features related to the construction of the mill were uncovered (Gluckman and Baker 1967).
One of the first archaeologists to do any work in the area of the Bulow Plantation slave quarters was Charles Fairbanks, now well known for his search for *africanisms* at Kingsley Plantation. Fairbanks reported completing “a brief survey and limited testing at the site” (Fairbanks 1983:22) during the 1960s but due to a lack of funding he decided to look elsewhere for a suitable plantation era site. It is unclear if any excavations were carried out by Fairbanks at Bulow Plantation, or what if any artifacts were uncovered. However, Fairbanks did mention the discovery of several slave quarters that most likely dated to the time when the plantation was in use during the early 1800s (Fairbanks 1983:23). The only other archaeological survey to explicitly examine the area of the slave quarters at Bulow Plantation was conducted in 1979 ahead of a proposed housing development nearby. Several coquina clusters, spaced about 20 m apart in some places, were located to the north and south of the main plantation entrance road and were found to form a semi-circular arc around the plantation core area (Daniel et al 1980; FMSF form for Bulow Slave Houses). Although these clusters were found during the survey, they were not mapped or given coordinates sufficient for park managers today to be able to re-locate them on the ground.

In 2001 both Payne and Griffin (2001) and Wayne et al (2001) completed historical overviews and reports on the sugar producing plantations of the East Florida region, including Bulow Plantation. Payne and Griffin (2001:82-92) give a brief overview of the history of the site, as well as a review of all the previous archaeological work that had been completed within different areas of the plantation. Although Wayne et al (2001) also give an overview of past archaeological work at Bulow Plantation in addition to a review of its history, they also discuss the discuss the state of preservation
of the mill and spring house structures and give recommendations for both future structural stabilization and heritage tourism possibilities at the site.

In June of 2004, due to the placement of an underground electric line, septic tank, and drain field, limited archaeological testing and monitoring were completed along the area of the main plantation entrance road (Newman 2005). Two shovel tests were excavated along the impacted area of the road to a depth of 1 meter and artifacts, including one blue transferprint pearlware sherd and a piece of nineteenth century crockery, were recovered. Areas of dark grey to brown soil containing charcoal were also noted approximately 20-40 cm below surface. Also as part of this survey Newman and DEP Biologist and Archaeological Monitor Charles DuToit recorded six coquina block features using GPS that were previously identified by Daniel et al (1980) and Baker (1991;1999) as being related to the plantation era slave quarters.

In 2009, Collins and Doering (2009a) completed a project to document the Bulow Plantation Ruins, as well as the nearby Dummett Sugar Mill, using terrestrial laser scanning (TLS) and GPS survey for the Florida Park Service (FPS), Department of Environmental Protection (FDEP). In addition to recording the mill structure at Bulow, several concentrations of cut coquina blocks (most likely related to the plantation era slave cabins), as well as other plantation era features such as the main house, well, and boat slips were located throughout the park and recording using sub-meter GPS as part of the larger project. Additionally, in 2010 Collins et al (2010) completed a large scale sensitivity modeling project for FPS District 3 that included Bulow Plantation Ruins Historic State Park. Building upon their previous work at the site, Collins et al (2010) determined areas of potential archaeological sensitivity using GIS based models that
included digital elevation models from LiDAR data, georeferenced historical maps and records, aerial photography, and data recorded during site surveys using sub-meter GPS (Collins et al 2010:xix). The work done in these projects (Collins and Doering 2009a; Collins et al 2010) forms the basis for the work done for this thesis.
Chapter Three: Methods

Background Research

As a first step, this project began with extensive background and archival research during the summer and fall of 2009 at libraries and archival collections throughout the state of Florida. Plat maps, Coastal Survey maps, historic deeds, maps and aerial photography were collected from the Florida State archive and the Florida Park Service archive in Tallahassee, as well as from the Florida Historical Society archive in Coco Beach, Florida. Additionally, primary documents in the form of the Spanish Land Grants, as well as wills from libraries in South Carolina, census data, Second Seminole War era claims documents, and first-hand accounts written by visitors to that area of East Florida during the time of the plantation’s occupation were examined.

Landscape Archaeology and GIS

Within the past thirty years, Geographical Information Systems or GIS have become a powerful tool for archaeologists, not only in the location and recording of archaeological sites but also in approaching more abstract questions related to site interpretation and issues of archaeological theory. As Conolly (2008:583) states, a GIS is “a computer-based tool for collecting, managing, integrating, visualizing, and analyzing geographically referenced information" such as historical maps, aerals, demographic
data, topographic maps, or GPS data. While some of the earliest GIS projects dealt with relatively simple issues such as the distribution of certain artifact classes over a site, as GIS use became more sophisticated issues such as predictive modeling and settlement pattern analysis also became more ubiquitous within archaeological research (Conolly 2008:584).

In order to gain a better understanding of the landscape of Bulow Plantation, and the ways that landscape has changed through time, a GIS for the area was created using ESRI’s ArcGIS software (Collins and Doering 2009a; Collins et al 2010). As stated above, a GIS is particularly useful in terms of archaeological research due to the ability to overlay and easily compare differing data layers. GIS allow researchers to combine many different forms of information simultaneously in order to quickly analyze data at a landscape level and then visualize spatial data more effectively (Westcott and Brandon 2000:1). GIS can also be a highly effective management tool. For Bulow Plantation, modern topographic maps, soil surveys, and photographic aerials were first imported and superimposed to assess the current land surface (Collins and Doering 2009a; Collins et al 2010).

Next, historical plat maps, coastal survey maps, and early Park Service maps obtained from the Florida State Archives and Florida Park Service Collections were digitized and georeferenced, or rectified to fit “within the appropriate coordinate space” (Chapman 2006:54), in the GIS based on identifiable features such as a still existing road or natural feature like a river (Collins and Doering 2009a; Collins et al 2010). Although historical maps are interesting in and of themselves due to the information they can give on the general spatial configuration of a past landscape, when historical maps which were
created with sufficiently precise survey techniques are georeferenced they can provide useful information within a GIS. These historical maps, along with information gleaned from past archaeological testing within the park, provided a first glimpse into the past landscape at Bulow Plantation. By overlaying these varied sources of data, both past and present, it was then possible to create a basemap for Bulow Plantation that could serve as both a guide for the proposed fieldwork as well as an aid in the interpretation of any additional spatial data that were collected (Collins and Doering 2009a; Collins et al 2010).

*Pedestrian Survey*

In January of 2010, as a part of a much larger project completed by AIST for the Florida Department of Environmental Protection (Collins and Doering 2009a; Collins et al 2010) and under a 1A-32 archaeological permit obtained through the Florida Department of Historic Resources, described in more detail above, a pedestrian survey in the vicinity of the main plantation core was conducted in an attempt to locate the foundations or piers of several historic structures that were thought to be still extant above the ground surface. Myself, Lori Collins, Travis Doering, and USF graduate students Bart McLeod and Elizabeth McCoy made up the crew. The survey crew walked through the study area on north south transects spaced at 10 meter (m) intervals, first in the area to the north of the main entrance road and then in the more densely vegetated area to the south. When coquina blocks or features were encountered they were first flagged and then recorded with a sub-meter level of accuracy using a Trimble mapping grade Global Positioning System (GPS) unit. These data were later downloaded and
included in the GIS basemap created by AIST for Bulow Plantation (Collins and Doering 2009a; Collins et al 2010).

As an additional aspect to the fieldwork at this site, metal detectors were used as a way to test how useful they might be in locating historic structures at this site, as well as at similar plantation sites throughout the region. Metal detectors work much like a magnetometer in that they sense the electrical conductivity of metal objects located below the ground surface (Connor and Scott 1998:78). A coil within the metal detector unit creates a cone shaped electromagnetic field that can penetrate the ground to a depth of about 12 inches. When a metal object interrupts this electromagnetic field the disturbances it creates often differ based on the type of metal the object is composed of. Many metal detectors have a discrimination function that can be toggled to block out certain kinds of metal, such as ferrous objects, so that more “desirable” metal types like brass, gold, or silver can be focused on (Connor and Scott 1998:80). For the archaeologist this is usually undesirable as all types of metal objects might be significant.

Although much maligned due to its association with destructive practices such as treasure hunting and the looting of archaeological sites, when used in a systematic way metal detection can be a useful tool for the historical archaeologist. The use of geophysical techniques in general have become increasingly popular with archaeologists within the past few decades, with Ground Penetrating Radar (GPR), Magnetometry, and other non-invasive geophysical survey methods being used more and more in place of excavation (Gaffney 2008). However, archaeologists should take care not to rely too greatly on remote sensing techniques without supporting data in the form of background research or ground truthing. As Schmidt points out, “Geophysical results on their own are
only of limited use to resolve an archaeological problem. It is the archaeological interpretation of the results, using all possible background information…which provides useful new insights” (Schmidt 2007:2).

Metal detection or metal prospection has been used increasingly by archaeologists as a tool for locating historical sites. Metal detectors have been used most often in search of historical battlefields such as the famous site of “Custer’s Last Stand” (Fox and Scott 1991), yet their ability to delineate the distribution of metal artifacts can also aid in locating and delimiting other archaeological site types even when there is no visible surface scatter (Connor and Scott 1998:77). Limited metal detector surveys have been used at several plantation sites within the area of East Florida (Grange 1999; Stine and Stine 1999; Davidson 2007). Although Grange’s (1999) use of metal detectors was limited, Stine and Stine (1999) and Davidson (2007) used systematic surveys at Bisset and Kingsley Plantations, respectively, to delineate site boundaries and look for activity areas.

At this site, based on the premise that the wood frame Bulow structures burned to the ground during the Second Seminole War and that little activity has gone on in the area since that time, Bulow Plantation appears to have the potential for intact historical components or structural nail patterns. Using a systematic metal detector survey, it was hoped that possible nail patterns would be found in areas where plantation structures were previously recorded (Baker 1991; Baker 1999; Daniel et al 1980). As a part of the pedestrian survey described above, the slave cabin area at the extreme eastern end of the north arc was also surveyed with a metal detector in order to look for intact nail patterns. This area was chosen because based on past land uses and the amount of coquina
foundation stones still present in the area it appeared to be much less disturbed than other areas of the park. For this area the discrimination was turned down on the metal detector unit so that iron items could be identified, and subsequent hits were drawn in a planview map of the cabin area and then recorded using a mapping grade GPS unit.

_Landscape Archaeology and Aerial LiDAR_

In addition to traditional ground-based survey methods, with this project I also hoped to take advantage of modern remote sensing technology in order to get a more complete picture of the topographic landscape of Bulow Plantation. Unlike many traditional methods of archaeological survey, remote sensing technique can often detect archaeological features without any disturbance or damage to the site. One relatively new remote sensing technique, known as LiDAR, stands for Light Detection and Ranging and is a type of remote sensing that can be used to create highly accurate three dimensional representations of topographic surface features and landscapes known as digital elevation models or DEMs.

LiDAR works by emitting a pulse of near infrared energy which is then reflected off the object being recorded, such as a building, trees, or the ground, and is reflected back to the LiDAR unit. The time of flight and geographic position of the pulse are then recorded, and the travel time is then converted into a distance to the object (Ackermann 1999:64). Based on the strength of the pulse, as well as the speed and altitude of the airplane taking the measurements, up to 20 points can be collected per square meter. Each point is given a xyz coordinate in order to record its place in three dimensional space, and other data such as pulse return intensity can also be collected. In general, LiDAR is a
highly accurate method for capturing topographic data, and depending on instrumentation and atmospheric conditions points derived from LiDAR returns can have a vertical accuracy of less than 6 inches (Harmon et al. 2006:650).

One benefit of aerial LiDAR data is its ability to “see” through vegetation and record the bare ground surface, sometimes even in heavily forested areas (Devereux et al. 2005; Liu 2008:32). Unlike traditional aerial photography and photogrammetry techniques, LiDAR is often able to penetrate dense vegetation and receive returns from the obscured ground surface. At an earthen hillfort site in England Devereux et al (2005) were able to detect earthworks as well as much smaller topographic features through a thick canopy of deciduous and coniferous trees using aerial LiDAR. In some cases these detected features had an elevation of as little as 0.5 m or less (Devereux et al. 2005:658,653).

One factor that must be taken into consideration, however, is that the return signals that make up LiDAR data can come from many sources besides the bare earth, including: vegetation, man-made objects, or even animals (Liu 2008:32). Because of this, one critical step in creating a DEM from LiDAR data is filtering that data correctly for bare earth points. Interpolation based, slope based, and morphological filter methods are the three most used popular for use with LiDAR data, however each has its strengths and weaknesses in relation to different terrain types (Liu 2008:35-36). As Liu (2008:33) points out in his assessment of DEM creation using LiDAR data, choices by the researcher such as “modeling methods, interpolation algorithm, grid size, and data reduction” all need to be looked at with a critical eye and with an understanding of best practices.
One example of the use of LiDAR for the detection of features within a prehistoric landscape is the work done by Bewley et al (2005) at Stonehenge. Using DEMs as well as a special feature within ArcGIS that allows the using to change to angle of artificial light, thus highlighting raised features, Bewley et al show a range of possibilities for aerial LiDAR data. Not only were they able to locate previously known features on the landscape, they were also able to pin point new sites and even landscape features that were thought to of been destroyed by ploughing and modern disturbance. Also, by eliminating surface features like vegetation they were able to locate features that would have been impossible to locate with traditional aerial photography methods (Bewley et al. 2005:640-42).

Although Bewley et al’s (2005) work at Stonehenge was successful in identifying new landscape features, the open plains around the site provided little in the way of vegetation or tree cover that might have impeded the aerial LiDAR survey. One example of the use of LiDAR to detect archaeological sites and landscape features in heavily forested areas is the work of Chase et al (2010) at the ancient Maya site of Caracol in Belize. Previous efforts to map the site of Caracol had been somewhat successful, but the heavy vegetation and tree canopy in the area made any survey work slow moving and less than optimal. With the advent of more advanced remote sensing techniques such as aerial LiDAR surveys these more labor intensive methods used by previous researchers in the Caracol area could be eschewed for a faster and more accurate technique. As mentioned above, aerial LiDAR can often penetrate tree canopies or vegetation and be used to record the ground surface below. In the case of the work at Caracol, researchers chose to time their survey flights to the end of the dry season so that the number of leaves
on the trees would be at a minimum and the LiDAR pulses used in the survey would thus have the greatest penetration through the canopy (Chase et al 2010:5). The DEM created from the LiDAR survey data was able to show many previously unrecorded archaeological landscape features such as terraces, causeways, and other structures as well as other landscape features that had been previously recorded. As Chase et al report “Even in areas that were intensively surveyed, LiDAR imaging reveals additional ancient land modification beyond that recorded [previously]… These features were missed in the ground surveys because they were obscured by the rainforest growth – the same growth that the LiDAR successfully penetrates” (Chase et al 2010:5). When combined with “ground checks, traditional mapping, and excavation” (Chase et al 2010:7) DEMs produced from LiDAR data can be invaluable in understanding past landscapes, especially those that are now covered in heavy vegetation.

Harmon et al (2006) have also used LiDAR effectively for the detection of archaeological features, this time at two eighteenth century plantation sites in Maryland. At one of the plantations, known as Wye Hall, DEMs derived from LiDAR data showed landscape features such as terraces, roads, and individual garden beds. By viewing this topographic model at the landscape level, Harmon et al (2006) were able better discern the planned nature and geometric patterning of the historical plantation. At the Tulip Hill site LiDAR data was again used to look past manipulations of the landscape. In addition to detecting garden beds, terraces, and other features meant to play with perspective like those seen at Wye Hall, researchers also detected areas where previously unknown archaeological features such as the work yard and slave quarters might have been located (Harmon et al. 2006:662).
The data used for this study were obtained from the Florida Division of Emergency Management at their website www.floridadisaster.org/gis. The LiDAR points were collected in the winter of 2004 in order to minimize the amount of foliage that might otherwise obscure the ground surface when viewed from the air. According to the metadata obtained with this data set, points obtained through this LiDAR survey have a horizontal accuracy of 1 m and a 0.88 foot vertical accuracy at a 95 percent confidence level. In order to make it easier for users to create bare earth models, these data are pre-classified using proprietary filters into classes such as vegetation, buildings, noise, ground, and water. This classification then makes it possible for researchers to evaluate the LiDAR returns for bare earth and thus select only those points when creating their DEM.

The data, as described above, were first obtained in a binary LAS format. As described by the American Society for Photogrammetry and Remote Sensing (www.asprs.org/society/committees/lidar/lidar_format.html), LAS is a binary file format designed to facilitate the use of LiDAR data by the public in a way that is non-proprietary and does not degrade the data set upon conversion to a usable file format. In order to create a three dimensional model of the ground surface at Bulow Plantation I first imported LAS data covering the project area into ArcGIS using an LAS reader from Geocue Corporation (©2004-2010). I then re-projected the data into UTM NAD83 and kept the elevations in feet. Archaeologists generally work in the metric system, but historic sites present a problem in that their structures were usually built using feet and inches. Because the historical documents related to Bulow Plantation refer to the dimensions of buildings in feet I chose not to convert everything to meters. As a next step
I selected only points that were classified as coming from the ground and water, removing points that were classified as being from buildings or vegetation and thus attempting to create a model of the bare ground surface. As discussed above, there are some issues with filtering points into either ground or non-ground categories so it should be kept in mind that some of the points classified as ground might in fact be vegetation of some kind. As with all forms of remote sensing, some form of ground truthing is always needed to verify the accuracy of the LiDAR data and DEM. Next, I brought the LAS data in Spatial Analyst as a shapefile and interpolated the data directly into a raster (with a cell size of 1 foot) based on the elevation of each point. This method creates smooth lines between LiDAR data points instead of sharp unnatural polygons, creating a DEM that is closer to what the true ground surface might look like.

Viewshed Analysis

As seen in much of the literature regarding plantation studies slave owners were not confined to only physical means when it came to controlling their enslaved workforce. Seemingly mundane features of the plantation landscape such as the layout, architecture, and even use of plantings were also used by owners as a means to manage their workforce and assert their control, although these attempts were not always successful. Given the importance of surveillance in the maintenance of power and control within the plantation landscape, and in order to gain a greater understanding of the power dynamics at Bulow Plantation, it is necessary to examine the differing viewsheds within the plantation landscape based on the past building locations and topography.
A viewshed is a binary representation of what is visible and what is not visible within a given topographic area based on a defined observation point. Using specific algorithms the GIS calculates whether a given cell is visible from a set observation point or whether the cell is obscured by topography. This calculation is then repeated for every cell within the study area, resulting in a raster data set where observable and hidden cells are coded based on their visibility by the observer (Chapman 2006:83). When selecting the observation point it is also possible to account for the height or elevation of the observer, in this way it is argued that one can objectively calculate what areas could potentially be seen and what areas might have been obscured from the view of an individual at a certain point on the landscape (Conolly 2008:583).

Viewshed analysis within GIS is a relatively new analytical technique and has been critiqued on several points, although many of these shortcomings have been accounted for in more recent projects. First, because most viewshed analyses are based on DEMs that represent the bare ground surface or modern ground cover they fail to take into account past vegetation and ground cover that might have impacted the visibility of certain features (Wheatley and Gillings 2000:5). Ground cover and vegetation are not immutable and might have changed drastically over time as land uses also evolved. Wheatley and Gillings (2000:6) assert that these issues must be taken into account but that individual lines of sight “cannot be assumed to be actual lines of sight in prehistory” and are more important in the aggregate as “patterns of visibility and intervisibility that are produced through the accumulation of these effects.” At Bulow Plantation historical accounts indicate that much of the land constituting the plantation core was cleared of its vegetation and tree cover, leaving an open expanse interrupted only by plantation
buildings and agricultural fields. In contrast, the area today is covered in pine forest and
dense palmetto scrub, obscuring much of the area that would have been cleared
historically. Only through the use of a GIS can these obstructions be subtracted so that
the original inter-visibility of plantation structures can then be modeled.

As Wheatley and Gillings (2000:6) point out in their review of viewshed analysis
critiques, “being theoretically able to see something is very different from actually being
able to recognise what it is that you are looking at.” Within this vein, a second problem
with GIS based viewshed analysis is that it is based in an idealized framework that does
not necessarily account for issues such as the visual acuity of the observer or reduced
visibility caused by atmospheric clarity (Chapman 2006:101). One response to this
critique has been the development of “fuzzy viewsheds” or viewsheds where visible areas
are weighted by their relative closeness to the observer (Ogburn 2006). Areas within the
closest radius are thought to be visible with a higher degree of detail, while areas within
ensuing rings are still visible to the observer but with less and less clarity. For projects
where research questions involve the inter-visibility of far flung sites this model of
viewshed analysis does a better job of describing the level of site visibility. Although the
relative size and height of objects within the landscape of Bulow Plantation must be
considered when analyzing the plantation’s viewshed, the relatively compact area being
studied means that plantation structures would all fall within the zone of highest
visibility.

In terms of this project, viewshed analyses were conducted within ESRI’s
ArcView version 10 based on the DEM created using aerial LiDAR data, as described
above. Observation points were placed in the area of the main house (both at ground level
and at the height of the second floor. For the majority of the points the observer height was set at 5.75 ft (1.7 m), this is the standard height used for an adult in most viewshed studies (Chapman 2006:85). In the case of the main house, a point was also placed at a higher elevation 15.75 ft (4.8 m) in order to simulate the observer standing on the second floor porch.

A discussion of the results of these methods, as well as an assessment of the relative effectiveness and ease of each will be examined below. It was hoped that by bringing together these various remote sensing techniques new information could be gained about the cultural landscape of Bulow Plantation. Also, because these techniques have little to no impact on sub-surface archaeological remains this study might also serve as a model for other researchers working at sites where more destructive techniques are not permitted or are unwarranted at the present time.
Chapter Four: Theoretical Perspective

Plantation Archaeology

Much like historical archaeology in general, plantation studies within archaeology owe their origins to several different disciplines. Some of the earliest inquiries into the material remains of plantations focused on the architecture of important homes in order to reconstruct or preserve them. Great Houses associated with important figures, such as Mount Vernon and Monticello, were among some of the first although much of the early work at these sites was never published (Singleton 1990:71). As with the culture histories of early prehistoric archaeology, these early plantation studies were primarily descriptive and focused mainly on identifying the location and function of structures. More anthropological questions regarding the lives of the enslaved population at these plantation sites were often not addressed. Singleton (1990) points out in her survey of plantation archaeology that these early inquiries owed more to the field of history than to anthropology, using archaeological data as a way to fill in the gaps of the accepted historical narrative for a site. The focus was usually on the well known historical figures that had inhabited these plantations, not the multitudes of others who also called them home (Singleton 1990:71).
With the rise of the Civil Rights movement in the 1960s, some archaeologists became increasingly aware of the fact that a huge segment of society was being left out of the accepted narrative of our nation’s early history. One of the first examples of the use of a more anthropological approach at a plantation site, and one with a focus on the lives of the enslaved inhabitants, came in the 1960s with Fairbanks’s search for “africanisms” at Kingsley Plantation (Fairbanks 1983). Through the excavation of an actual slave residence, Fairbanks hoped to uncover items of material culture that had been brought from Africa, or that could be directly correlated to items of known African origin (Fairbanks 1983:23). Despite the fact that Kingsley Plantation seemed to have great potential for such a study, Fairbanks was unable to locate any definitive examples of African material culture at the site (Fairbanks 1983:23; 1984:10). In a similar vein, the work of Ascher and Fairbanks (1971) at a slave cabin on Cumberland Island, Georgia also sought to get a sense of daily life for the enslaved through the material items they left behind instead of the historical documents their enslavers left behind.

In a similar study to Fairbanks’s (1983) work at Kingsley Plantation, Vernon Baker’s (1980) excavations at the early nineteenth century home of a freed Black woman, Lucy Foster, also focused on the search for evidence of explicitly African material culture. Based on John Otto’s (1984) earlier work at Cannon’s Point Plantation in Georgia, Baker looked not only for strictly African cultural remains but also for general differences in the ceramic assemblage as compared to what might be found at sites associated with poor whites in the same area (Baker 1980:33). In addition to these ceramic remains Baker (1980:34) also examined the architectural remains of Lucy Foster’s home as a means of looking for a distinctive Black or African pattern in the
archaeological record. Based on studies by Deetz (1977) and Vlach (1976) that identified potential African influences on vernacular architecture and shotgun houses, respectively, Baker (1980:35) found that the 12 foot dimensions found at Lucy Foster’s home were consistent with these previous works and the homes of other freed blacks. Work done by Deetz (1977), Vlach (1976), and Baker (1980) show that while it might be difficult to find blatant “africanisms” at sites associated with slaves or freedmen, it can be possible to use elements such as architectural style to examine differences between cultural groups.

Much like these earlier studies, contemporary archaeologists have made use of diverse lines of evidence such as foodways, ceramics, religious items, and architecture to investigate the lives of both the enslaved and the enslaver at sites which are varied both temporally and geographically. The theoretical underpinnings of these plantation studies have also become diverse, mirroring the larger trend within archaeology. One emerging area of inquiry within plantation archaeology focuses on the interplay of “economics and power” within past plantation systems (Singleton 1990). Within this theoretical framework “Marxist and non-Marxist approaches [are used] to identify the material elements of domination, power, and ideology particularly in plantation landscapes” (Singleton 1990:73), in this way it might then be possible to develop a general model through which all plantation systems can be viewed (Singleton 1990:77).

In an article about the expression of power in plantation landscapes Charles Orser (1988) adopts an explicitly “Marxian” theoretical standpoint in order to explain changes at Millwood Plantation. Through the framework of historical materialism Orser examines the links between such processes as “the division of labor and the economic class structure” of the time and the shifting dynamics of power and control within the
plantation landscape (Orser 1988:316). For Orser (1988) the material remains of these relations are visible in the plantation landscape, as the organization of labor changes through antebellum slavery to emancipation and tenancy the landscape must also change. Solely economic issues cannot be employed as “the determining element of social life” however and other elements must also be taken into account when examining the material remains of the past (Orser 1988:316-317).

The Archaeology of Landscapes

Just as Orser (1988) did with his study of wide scale changes in plantation landscapes, many archaeologists have recognized the utility of expanding their area of inquiry from that of the individual feature or household to a more wide scale study of both the built and natural environments, also known as the cultural landscape, in order to learn more about past people (Rotman and Nassaney 1997:42). The landscape studies that are popular within archaeology today encompass a wide range of diverse research areas but the theoretical underpinnings can be traced to fields outside of anthropology. Not surprisingly, some of the first scholarly ideas about landscapes come out of the field of geography (Anschuetz et al. 2001:164). As Anschuetz et al. point out in their examination of the development of early concepts of landscape, Carl Sauer’s early definition of the cultural landscape has many parallels to archaeologists interested in landscape today: “The cultural landscape is fashioned from a natural landscape by a culture group. Culture is the agent, the natural area is the medium, the cultural landscape is the result” (Sauer 1925 as quoted in Anschuetz et al. 2001:164).
Archaeological examinations of landscapes could be said to have gotten its real start with Gordon Willey’s famous Virú Valley survey during the 1950s. Willey, along with James Ford, mapped sites all over the Virú Valley in Peru and dated them by looking at the different ceramic types found at each site. In addition to simply mapping their distribution he also proposed ideas about why the patterns he observed might have changed through time, attributing the shift in settlements across the landscape to the spread of irrigation (Willey 1953). With the advent of the New Archaeology in the 1960s these sorts of studies became increasingly popular, with many archaeologists focusing on the underlying causes, both natural and cultural, for the changes in landscapes and their related settlement patterns and subsistence strategies through time (Anschuetz et al. 2001: 170).

In addition to these early landscape studies which focused on the distribution of sites as well as the underlying natural or technological causes of settlement change, the post-processual turn in archaeological thinking has led to an understanding that factors unrelated to a society’s basic subsistence needs can also shape a landscape. Especially within historical archaeology, many researchers have looked to social or ideological factors to understand landscape changes and what they indicate about the society as a whole (Anschuetz et al. 2001:172). Work by Orser and Nekola (1985) as well as Delle (1998), both described in more detail below, are typical of this branch of landscape studies within archaeology.

Like many terms used in archaeology there seem to be as many definitions for “landscape” as there are researchers studying it. Knapp and Ashmore (2003:6), in their introduction to landscape archaeology, see this multiplicity as a positive thing for the
discipline, “we would argue that...such instability and relativity actually serve to explain the appeal of exploring landscapes, as a catalyst to draw upon diverse approaches and to examine differing domains of human action and experience. There are multiple different domains of ‘knowing’ the earth and the socially recognized places upon it.” They point out that many of the early archaeological studies of landscape depict cultural landscapes as just “passive” backdrops for human subsistence, while much of the more recent research into landscapes has moved toward a view where “the constant mutual molding of landscapes and the people who dwell in them” is a more appropriate description of the way people and places interact (Knapp and Ashmore 2003:8).

In terms of this study I take a more all encompassing view of landscapes as shown by the definitions below. Cultural landscapes, as defined by Hood (1996:123) refer to the “physical spaces perceived and utilized by humans both explicitly and implicitly” and encompass both the natural environment and “all aspects of culturally defined space … [including] architecture…, gardens, yards, town organization, regional communication networks, fields, and wasteland.” Much like what one would traditionally think of in archaeology as an example of material culture (ceramics, sculpture, tools) landscapes can function as a large scale item of the material culture of the societies that created them, revealing important information about the values and identity of those past people. In line with these definitions, within this work I would define cultural landscapes as not only the natural features or built structures present in a given area but also the culturally derived ideas and experiences imbued into those places by past people. Landscapes are a cultural artifact, shaped by the physical needs and ideologies of people and societies but also capable of actively shaping those same societies.
In his study of Jamaican coffee plantations James Delle also adopts a view of landscapes as items of material culture, seeing them as being both “produced by human behavior and in turn effect[ing] the pattern of subsequent human behavior” (Delle 1998:37). Within this view, cultural landscapes are not only the result of specific processes within society, but can also serve to actively shape future relations within that society. These landscapes, whether intentionally or unintentionally, become a means to communicate messages regarding social status and structure through their layout as well as a way to control and shape the interactions of specific groups within a society (Rotman and Nassaney 1997:42).

Because landscapes can serve as an expression of the societies that created them, the ways they change through time can also be indicative of changes in societal structure. Perhaps one of the most well known studies of changing plantation landscape patterns is Orser’s work at Millwood Plantation in South Carolina (Orser and Nekola 1985). Through a careful examination of the distribution of slave quarters and outbuildings, Orser and Nekola (1985) were able to trace the changing landscape of Millwood Plantation through the antebellum period of slavery, to the rapidly changing period immediately following the Civil War, and finally into the Postbellum period of sharecropping. What they found was that the pattern of slave settlements, and indeed the entire plantation landscape, gradually changed throughout this tumultuous period to reflect the changing work patterns and new freedoms afforded to those previously enslaved (Orser and Nekola 1985:410). The authors do not attribute this shift from “nucleation during antebellum times to full dispersion during postbellum times” (Orser
and Nekola 1985:396) solely to issues of race or racism, but to the rapid changes in the organization and control of labor during the same period.

Another example of how societal changes can affect a transformation in the plantation landscape can be seen through archaeological work done at Middleburg Plantation in South Carolina (Barile 2004). By looking at the changes that occurred in the buildings at Middleburg Plantation and comparing that timeline of landscape change to larger events going on in the region Barile was able to draw some connections between the two. For example, during the time period between 1820 and 1830 significant changes were made to the landscape at Middleburg Plantation. The slave quarters were divided into smaller clusters of buildings and placed far away from the main house at the edge of the property (Barile 2004:129). Also, two storage buildings with thick walls and small, high-set windows were built closer to the main plantation house (Barile 2004:128). Also during this time in South Carolina, tensions between white plantation owners and enslaved blacks were at an all time high due to failed slave revolt that had been put down in 1821. Barile (2004:134) posits that due to the threat of new slave revolts throughout the region planters attempted to control their enslaved workers by breaking up slave communities by splitting up their housing and placing them at a “safer” distance from the main plantation house. The construction of fortified storage buildings also allowed the planter to better protect their property in case of a revolt. In addition to Middleburg Plantation, Barile (2004:135-136) also notes that several other plantations in the region also showed similar landscape changes during the time period between 1820 and 1830, lending further credence to the idea that outside factors such as slave unrest had an effect on how planters decided to order their landscapes.
One postbellum comes from the New Philadelphia site, a small Illinois town founded in 1836 by an African American (Fennell 2010:138). Contrary to what would have been the most economical route, through the town of New Philadelphia, a new railroad line built in 1869 purposefully bypassed the thriving town in favor of less racially diverse areas. Although not as overt as some of the racist tactics used on African Americans throughout history, Fennell posits that the rail line is a form of “aversive” racism inscribed on the landscape (Fennell 2010:141).

As described above, a cultural landscape is comprised of all aspects of the physical environment whether natural or man-made. Delle argues that in order to gain the fullest understanding of how a given space was utilized, shaped, and understood by past peoples more than this definition of the cultural landscape or “material space” must be considered. In addition, the ideas of “social space” and “cognitive space” must be incorporated into any comprehensive understanding of a landscape as material culture (Delle 1998:37).

Social space relates to the “spatial relationships that exist between people and that are experienced in material space” and is usually contingent on societal norms or the best interests of those in positions of power (Delle 1998:38). In the simplest terms, social space defines the ways in which it is acceptable for people to interact with each other or with the cultural landscape. An example of social space might be the differing ideas within certain cultures about the amount of space allocated for each member of a given household. In certain cultures it is not uncommon for several generations of one family to live very close together within one house, while in some western societies it is common for every member of the nuclear family to have a separate room within one house. In
terms of plantation landscapes, Delle states that social space might be exemplified by planters’ ideas about the optimal location of slave quarters in relation to their homes and fields (Delle 1998:39).

Cognitive space refers to a more symbolic view of material and social space; what matters is not the physical landscape but how space is idealized or conceptualized within a society or by a group (Delle 1998:39). Paintings, architectural books, written descriptions, maps, and plats all represent the physical landscape, but as representations of cognitive space they are not always a perfect mirror of reality. Often these cognitive spaces are idealized views of reality which focus more on archetypes than on how those forms are implemented in the real world. An example of this might be a painting of a plantation house commissioned by the landowner. While the house itself might be shown in great detail, less aesthetically pleasing buildings such as sheds or slave quarters might be erased from the painted landscape.

Similar to Delle’s (1998) material, social, and cognitive space, Knapp and Ashmore (2003) also break cultural landscapes down into three distinct categories: “constructed landscapes”, “conceptualized landscapes”, and “ideational landscapes”. Like material space, they see the constructed landscape as not only buildings and monuments explicitly planned and created by humans but also overlooked features such as paths or industrial slag heaps that can also give a view into the activities of past people (Knapp and Ashmore 2003:10-11). Additionally, like Delle, natural features are also included in this category due to the fact that even though they are not constructed by humans they play an important role in how the physical world is perceived and experienced.
Just as Delle’s social space deals with the culturally defined relationships between people and their environment, Knapp and Ashmore’s conceptualized landscapes also rely on local practice and culture. They view this class of landscapes as being “mediated through and to some extent constitutive of social processes, which in turn are integral to their reproduction as concepts” (Knapp and Ashmore 2003:11). These landscapes are suffused with cultural meanings that are not readily visible or knowable to an outsider, such as sacred Native American landscapes and medicine grounds. Finally, like Delle’s cognitive space Knapp and Ashmore give us their ideational landscapes. For this final category they define ideational landscapes as a kind of “mental landscape” which is both “imaginative (in the sense of being a mental image of something) and emotional (in the sense of cultivating or eliciting some spiritual value or ideal)” (Knapp and Ashmore 2003:12). These landscapes do not necessarily exist in any physical sense but serve to impart important information regarding the beliefs of a certain society. The authors caution that while it is possible to view these three categories separately, there is often no clear boundary between them.

As both of these examples show, in order to more completely understand past cultural landscapes and in turn the societies that shaped them it is vital to take into account not only the material landscape, but also social and cognitive space. In his study of Jamaican coffee plantations Delle (1998) not only examines the physical remains of past plantation landscapes but also considers the socio-economic landscape of Jamaica during the same time period. Similarly, in this examination of the cultural landscape of Bulow Plantation I intend to examine not only the “material” or “constructed” landscape,
but also the social and cognitive spaces that shaped life on the plantation for both enslaved and enslaver.

_Landscapes of Power and Control_

In some ways American plantations, and sugar plantations in particular, can be seen as some of the earliest examples of industrialization within the South. The successful growth, harvest, and processing of a crop required massive coordination of enslaved workers and a keen understanding of the cycle of growth for those crops being cultivated. Sugar plantations in particular required not only skill in the planting and harvesting of cane but also in the running of the complex mills that were used to process the cane syrup into sugar. It is a highly specialized process that requires skill and precise timing in order to produce a product of the best quality (Wayne 2010:12). Unlike what one would think of as a normal industrial factory on plantations in the American South the workforce was made up entirely of enslaved people. In addition to controlling the schedule of planting and processing planters also needed to control a workforce that was essentially being held against their will.

This need for tight control of a workforce of enslaved people necessitated the creation of specialized landscapes that would both demonstrate and naturalize the power of the planter and facilitate the overseeing and control of slaves from day to day. During the eighteenth and early nineteenth centuries a new worldview came into vogue that shaped the forms of everything from private homes, to plantations, to even our nation’s capital. Epitomized by the ideals of “balance, order, symmetry, segmentation, and standardization” (Leone and Potter 1988:212), the Georgian system of thought affected
many aspects of life within the eighteenth and nineteenth centuries but was perhaps most evident in the architecture of the time. The focus on order and symmetry led to the adoption of architectural motifs from ancient Greece via designs and principles of the renaissance architect Andrea Palladio. During the Renaissance, Andrea Palladio studied the ruins of ancient Greece and Rome looking for ideal forms of architecture that could be translated to the buildings of his day. He saw in the classical temples and monuments a "shining and sublime testimony of Roman excellence and grandeur" and a "quality of virtue" (Wittkower 1971:105) which seemed to be a product of their harmonious design. In trying to achieve a similar language of virtue and grandeur in his own buildings, Palladio became the first architect to make consistent use of the temple front on the façades of his villas (Wittkower 1971:111). Later in the eighteenth and nineteenth centuries, neoclassical architects would again utilize the temple front to convey a message of virtue and power (Leone and Silberman 1995:127).

Despite this widespread use, many of the best examples of neoclassical architecture in the U.S. could be found in the historically more agrarian southern states. Much like Palladio's villas had elevated the home and agricultural production to a divine level in the sixteenth century, southern plantation owners appropriated the language of power and democracy from classical motifs in order to legitimate their way of life (Leone and Silberman 1995:127). In a comparison of two South Carolina rice plantations, Lewis (1985) explores the link between the socioeconomic realities of the time and the arrangement of buildings using Georgian principles in order to develop a general model for plantation settlement patterns. He describes the layout of plantation structures as being related to their basic function as a component in a larger system of production
The need for specialized, intensive labor necessitated the centralized control of enslaved workers, and therefore required plantation buildings (including slave quarters) to be arranged “in a compact settlement centered around the owner’s residence” (Lewis 1985:37). This was often translated into a landscape characterized by a nucleated slave village situated around a road near the main house, as well as a strict Georgian symmetry and geometric patterning of the other dependencies or outbuildings (Lewis 1985:38).

As stated above plantation owners, much like any factory or business owner, wanted to control their workforce. Leone contends in his study of merchant capitalism in Annapolis, Maryland that during the eighteenth and early nineteenth centuries elites utilized Georgian ideals in order to control their workforces and organize the emerging system of capitalism (Leone and Potter 1988:214). Perhaps one of the most widely cited studies into the use of Georgian principles to manipulate a landscape is Leone’s (1989) work at the William Paca Estate in Annapolis, Maryland. Through archaeological and historical research, Leone shows how elites of the time manipulated perspective using symmetry and geometric shapes and created artificial lines of sight within the natural landscape and built environment to substantiate, and make almost inevitable, their claim to power (Leone 1996:383).

Dialectics of Power

While Leone focused more on the one-sided control and substantiation of power through Georgian inspired landscape, many archaeologists at plantation sites have also focused on the dialectics of power or the ways the interplay between planters and the
enslaved people they sought to control have translated into the cultural landscape. As Thomas (1998:532) points out, “a dialectical view of power is a relational view of power, in that power exists as a constituent part of all social interaction.” Although the ability and methods used by planters to enforce their will on an enslaved population might be more obvious to the viewer, a back and forth (though sometimes uneven) did take place between the two. Thomas (1998:532) also point out that while the goal for archaeologists should not just be to look for naked examples of power relations in the material record of plantation sites, they should rather “view power relations as a force that helped to structure the way in which the material record of plantation life was formed.”

In separate archaeological studies of Cuban and Jamaican (respectively) coffee plantations, Singleton (2001) and Delle (1999) both explore this dynamic within the remains of plantations. For Singleton almost every feature within the plantation landscape was consciously designed and constructed by the planter to “maximize profits, exercise surveillance and reinforce the subordinate status of enslaved people” while on the other hand, the enslaved people forced to work at these plantations were able to resist this control through the modifications they made to their houses or yard areas (Singleton 2001:105,108). For Delle, the landscapes of Jamaican coffee plantations reveal a wealth of information regarding the negotiation and construction of class and control within the plantation system (Delle 1999:137). Planters controlled “access to the agricultural means of production, particularly land” (Delle 1999:139) in order to substantiate their claims to power and control “the social relations of production” (Delle 1999:140). Particularly through the use of surveillance and the division of the landscape based on specific tasks
Jamaican planters in the region of Delle’s study manipulated the landscape in order to attempt to control their large enslaved populations (Delle 1999:152).

In Thomas’s own work (1998), several lines of evidence are examined in order to get a more complete picture of power relations at the Hermitage Plantation. As might be expected, classes of material culture that were for the most part controlled or provided by the planter to the enslaved tended to reinforce the planter’s view on how plantation society should be ordered, while areas left to the enslaved community show a much different picture. For example, in Thomas’s view the plantation landscape, one of the most conspicuous examples of the planter’s power over the enslaved population, was design not only “to impose order and control, but...also...to some extent to reinforce a planter’s view of slave community” (Thomas 1998:539). By attempting to impose their view on how slave society should be ordered, with house slaves in the better constructed houses close to the main house and field hands in more rough hewn dwellings farther from the plantation core, planters attempted to use their power over the landscape to influence their slaves. However, when Thomas examined other classes of material culture, such as faunal remains, these differences between house and field slaves were not as visible (Thomas 1998:542).

In a separate study of the Hermitage Plantation, Battle (2004) shows that not even the plantation landscape was free from the push and pull of power between master and enslaved. As Battle points out “for the enslaved, the plantation landscape was contested ground where they asserted themselves by using and defining space to suit their needs, regardless of the slave owner’s intentions” (Battle 2004:43). By using outdoor spaces communally at the Hermitage, the enslaved community was able to overcome the
planter’s desire to define their family units through the use of separate housing (Battle 2004:49).

In Hauser’s work on the archaeology of the enslaved in eighteenth-century Jamaica, the push and pull of enslaver and enslaved is not limited by the boundaries of the plantation itself (Hauser 2008). Although planters set up local markets to serve the economic needs of their plantations, for the enslaved they became “a locus of interaction where the enslaved could transgress the social and geographic boundaries imposed by the plantation” (Hauser 2008:9). Hauser looks to the remains of coarse local earthenwares as a way to map the economic and social interactions of Jamaican slaves through the market system. Even though planters hoped to control their enslaved workforce through the plantation system, Hauser shows that the enslaved residents of Jamaica resisted the control of the planter by creating their own landscape of economic interaction.

What these examples show, and as Battle (2004:44) points out in her article, is that what the planter perceived in the ordering of their landscape and how the enslaved community lived within that plantation landscape are not necessarily the same thing. It is important to remember when examining solely the built environment of a plantation that only half the story is being represented. With this in mind, it should be remembered that this thesis is only a starting point in telling the story of Bulow Plantation. Without any subsurface archaeology it is impossible to show both sides of the power struggle that inevitably occurred between enslaver and enslaved.
Chapter Five: Setting

In 1763 Great Britain established the colony of East Florida from land they had received from Spain. The general boundaries of this region stretched from the St. Mary’s River to the north to the Apalachicola River in the west and then east all the way to the Atlantic Ocean, with St. Augustine as its capital city. As Wayne (2010:5) points out, although the East Florida colony covered a wide area, during most of its existence the majority of the population lived along a small strip of land between the St. John’s River and the Atlantic Ocean. As I will discuss below, the East Florida region had a plantation culture somewhat distinct from other areas of the slave-holding south as well as its sister colony of West Florida. Although other forces also shaped life at Bulow Plantation, the social milieu of East Florida would have also had a profound effect on what life was like there for both enslaved and enslaver.

Today’s Bulow Plantation is located near the southern boundary of Flagler County, but during the early 1800s it would have fallen within what was then known as Mosquito County. Today, Mosquito County would include Flagler, Volusia, and Orange Counties within its boundaries. Much like the other large plantations in East Florida at the time, Bulow Plantation was located in the relatively small area between the St. Johns River and the Atlantic Ocean and just to the west of a small creek that fed into the larger Halifax River. This access to water was important for planters in the East Florida region.
because it allowed them a quick route to transport their crops to larger markets for sale. Despite the fact that roads did exist in the region, such as the King’s Road to St. Augustine that ran directly to the west of Bulow Plantation, they were not always reliable and in times of conflict could become dangerous to travel (Wayne 2010:6).

Bulow was not the only one to take advantage of the area. To the north of his plantation was the Pellicer Plantation, while to his south was the property of the Ormond family. As can be seen in Figure 5.1 several other sugar producing plantations were also known to be located in the area prior to the Second Seminole War. As with Bulow Plantation, many area plantation owner’s constructed coquina block mills and took advantage of the swampy land and close access to waterways in order to produce their own crops of sugar. Although his plantation represented his largest investment of capital in the East Florida region, like many of the other planters in the area at the time Bulow also owned a house and some other property in the capital of St. Augustine. While Bulow’s St. Augustine house does not exist in its original form today, it was located on a prime lot fronting on Marine Street and surrounded by several other wealthy landowners. Today, what was previously the Bulow family residence in St. Augustine is now a Harry’s Seafood Restaurant.

Environmental Setting

One important factor that drew planters to this region of east Florida was an environmental setting that was well suited to the cultivation of sugar cane and other cash
crops. The abundance of water, both from freshwater streams and brackish tidal bodies, as well as the favorable soils in some areas made for an ideal agricultural area. Within what is now Bulow Plantation Ruins Historic State Park, the park itself as well as what would have been the area of the main plantation core is bounded on the east by Bulow Creek, which is a small tidal creek that flows into the Halifax River to the south.
Additionally, an artesian well is located within the park and is associated with the plantation era sugar mill.

The area soils would have also been beneficial to the cultivation of sugar cane and other plantation crops. Figure 5.2 shows the various soil types found in the area of Bulow Plantation. Within Bulow Plantation Ruins Historic State Park cassia fine sand is located in the area closest to Bulow Creek, in the vicinity of what would have been the plantation core. This soil type is somewhat poorly drained and acidic, with very low levels of organic matter and thus poor soil fertility. Just to the west of that is an area of Tuscanwilla fine sand that is much better suited to agriculture. This soil type is a poorly drained, loamy soil formed from marine sediments. The layers of shell within this soil type “increase the fertility of Tuscanwilla soils, a fact known to John Bulow and other area planters who cultivated sugarcane and other crops in the lowlands along Bulow Creek prior to the second Seminole War” (FDEP 2003:13).

During the time when Bulow Plantation was at its height, the natural environment would have been quite different from what we see there today. One contemporary account, by a soldier stationed at the site, describes the approach to the plantation this way, “The first object that struck us as we approached the plantation was an immense forest of dead *Live Oak*, … It must once have been a beautiful grove” (Smith 1836:169). Continuing down the plantation entrance road toward the main house “We were passing a long hammock a little way off to out right [south], which consisted of an almost entire growth of palmetto trees forming a beautiful dark grove, or rather forest. This deep swamp which skirted the horizon…” (Smith 1836:171). Although Smith does not make specific reference to the type of plant growth found within the arc of slave cabins he does
go on to lament that at many of the area plantations “instead of a beautiful lawn in front of our doors, [had] a forest of corn and an underwood of pease growing up to the very steps” (Smith 1836:170). Whether this refers to a garden or provision ground within the slave cabin arc at Bulow Plantation or not is unclear, although the fact that he references being able to see the cabins from his vantage at the fort near the main house indicates that any fields or vegetation would have been relatively low (Smith 1836:174). Smith also goes on to describe the environment on the other side of Bulow Creek, “We had not proceeded more than 300 yards, on a road which led through the marsh, to a cotton field…” (Smith 1836:179-180). He later goes on to mention that this road was the same on that is known to have continued on from the entrance road and crossed straight over the creek. Taken together, this account paints a picture of Bulow Plantation as covered in Oak Hammock to the west near the sugar mill, a swampy, palmetto filled area to the south of the main road, a relatively clear area in the vicinity of the plantation core, and an area of cotton fields across the river to the east.

Although in the past much of the area under study would have been cleared for cultivation, today the majority of the land that comprises Bulow Plantation Ruins Historic State Park is covered in upland mixed forest or mesic hammock. The overstory in this type of natural community would usually be predominated by live oak, but due to the past use of the land for the naval stores industry slash pines tend to predominate in many areas of the park (FDEP 2003:29-30). Also, while some areas of the park have a mostly clear understory, especially to the north of the entrance road, in the area to the south of the park entrance road heavy stands of saw palmetto predominate making it difficult to walk through the area.
Figure 5.2: Soil types found within Bulow Plantation Ruins Historic State Park.
Socio-Historical Setting

The area of East Florida was somewhat unique from the rest of the slave holding South in its practice of the “peculiar institution” due not only to its colonial history but also to its relative lack of development, difficult environment, and differences in the organization of its slave labor. With the arrival of the Spanish in East Florida and the establishment of the Spanish strongholds of St Augustine in 1565 and the West Florida capital of Pensacola in 1698 the regions of both East and West Florida took on a social character distinct from those slaveholding areas first colonized by the French or British. Due to restrictions on the importation of slaves under Spanish rule and relatively small population of settlers in the region during the first Spanish period from 1565 to 1763 the pool of laborers able to help in cultivation of crops was relatively small compared to the surrounding areas under British control (Smith 1973:9).

Perhaps due to the need to keep whatever limited labor force they did have happy, and due to the sparsely populated Florida wilderness that made for an easy escape, the system of slavery that developed in East Florida differed from contemporary British colonies. As Rivers points out (2000:2) “although racial prejudice existed in Spain and its New World colonies, evidence suggests that Spanish law and custom afforded slaves rights not systematically found in the Old South or in other slave systems with European origin.” This difference was well illustrated in the laws governing slavery under Spanish rule in East Florida. These laws protected the right of enslaved people to own property and take their owners to court in cases of gross mistreatment, there were even provisions for slaves to win their freedom through military service (Rivers 2000:66). This is not to say that slavery in Spanish East Florida was in any way defensible—countless people
were still made to work against their will in often brutal conditions—but it does show that the unique circumstances surrounding the development of Florida in general and East Florida in particular had a profound effect on the way the system of slavery and agriculture was shaped there.

When the Florida territory came under British rule in 1763 it was officially divided into East Florida, made up of most of the peninsula, and West Florida which stretched from the Apalachicola River to the Mississippi River (Griffin 2003:163). Many new settlers came to the area from places like Georgia and South Carolina during this period bringing with them their own ideas about race relations and how a plantation should be run. With the change in flags in 1763 and the beginning of British colonial rule these previously lax laws related to slavery in the region began to change. Although Rivers (2000:67) points out that the number of slaves increased very little during this time, race relations became much more rigid than under Spanish rule.

In 1783 East and West Florida again came under Spanish control. In an attempt to attract more settlers, the Spanish colonial government loosened its standards for new immigrants and began to allow non-Catholics as long as they brought a sufficient number of slaves and cattle (Griffin 2003:166). Many of the settlers who came to the East Florida region during this time were either from areas of the American south like South Carolina or Georgia or were British Loyalists from the Bahamas. John Russell the first owner of Bulow Plantation fell into the latter group. Rivers (2000:68) notes that while these settlers brought their own ideas of proper race relations “Spain remained in power in Florida long enough after the arrival of the Americans to change the newcomers’ attitudes about race and slavery rather than to be changed by the newcomers.” The wild Florida frontier made
for a much easier getaway for disgruntled slaves than the more developed states just to
the north.

In addition to the changes in flags and laws, as East Florida changed hands from
one colonial power to another the main crops produced by planters in the region also
changed throughout time. Indigo became the main crop produced by planters during the
British Period from 1763-1783, while the Second Spanish Period from 1783-1821 was
dominated by sea-island cotton production. Although some planters dabbled in sugar
production during these earlier time periods it would not be until East Florida came under
American control during the Territorial Period from 1821 until the Second Seminole War
in 1836 that sugar cane would become the main cash crop for the region. Although many
of East Florida’s plantations invested in large steam-powered sugar works during this
time they also planted other crops as a kind of hedge on their investments. Griffin
(1999:7) records in her assessment of the plantations of the Halifax-Mosquito area that at
Bulow plantation during this time while sugar was the main cash crop, cotton, indigo,
rice, and corn were also cultivated.

Like any other crop, sugar cane had its own cycle of growth and harvest which
shaped the schedule of life and work in East Florida. Cane was planted in the fall just as
the last year’s crop was being harvested. Smaller segments of mature cane would be cut
and placed in shallow holes so that they could sprout. While the work of preparing the
fields and harvesting the cane could be very difficult and labor intensive once a field of
cane was planted it was possible for the cane to “reproduce from the same joints for many
years in succession, although the later ‘ratoon cane’ may be less vigorous and produce
less juice” (Wayne 2010:17) in succeeding years. This fact, in addition to the relatively
small amount of attention needed by sugar cane during its growing season, allowed plantation workers to focus their efforts on other crops such as cotton, rice, and corn outside of sugar cane harvest time. While sugar cane grew relatively easily in the warm Florida climate, especially in areas like those around Bulow Plantation where freshwater streams were plentiful, the process of making sugar from the just harvested cane was much more involved.

In her book on the sugar plantations of East Florida Wayne (2010:12) makes the argument that more so than any of the other crops grown in the slave-holding south, sugar cane required a level of processing and technical expertise that was more akin to a form of industrial production. The production of sugar was not a simple task, it required several stages of processing and refinement as well as complicated steam powered machinery to help the process along. Especially during harvest time, the ability to control the workforce during the sugar making process was essential. Once harvested, the cane had only a very limited shelf life, making it essential that workers quickly and efficiently processed the newly cut cane.

In many parts of the world where slaves were used to cultivate sugar the gang system was the primary structure used to organize labor on plantations, “The gang system had a leader or driver who set the pace, sometimes urging the Negro on with whip lashings...” (Smith 1973:71) and workers continued to work until the driver said they could quit for the day. Although the majority of planters in other sugar producing regions, such as Louisiana or the Caribbean, organized their slave labor under the gang system, the system of labor on East Florida’s sugar plantations was somewhat different. Besides the relatively lax racial codes described above, the Spanish influence in East Florida also
brought about the widespread use of the task system in the region (Rivers 2000:68). The task system differed from the gang system in that each slave was given a certain amount of work that was expected to be completed each day, once this work was finished any remaining time left in the day was free for the slave to use as they wished. James Ormond, who grew up on the plantation just to the south of Bulow Plantation, explained the system this way:

All sorts of labor on the Plantation was portioned out, so much wood to be cut down in clearing land - so much in hoeing and harvesting, and so on, so that each one knew in the morning his or her appointed task, and these tasks were so light that an industrious hand could always get through with them by two or three o’clock in the day, and the rest of the time was their own to fish or hunt, or plow or plant as to them seemed best – All had their own little fields or pasture...(Ormond 1941:6)

Although they were still required to complete the work necessary to keep the plantation running, this system allowed slaves their own time to grow crops for their own use or hunt and fish for needed provisions for their families.

However, as Morgan (1982:568) points out in his assessment of the use of the task system on the rice plantations of the South Carolina Lowcountry, this system of labor organization was to some extent dependent on the type of crop being cultivated. Rice required relatively little in the way of direct supervision and constant care so it worked well with the task system where slaves only had to work part of the day. Crops like sugar required much more “strict regimentation and ‘semi-industrialised’ production techniques” (Morgan 1982:568), especially during harvest time, that made it more likely to be cultivated on plantations that used the gang system of labor. Why then would the
Planters of East Florida use a system of labor that was not suited for a maximum output of their main cash crop of sugar cane?

One possibility is that much like the more lax laws and racial attitudes that were meant to keep slaves in the region content, the task system, which allowed slaves who finished their work free time to use as they saw fit, was yet another tactic used to keep the enslaved population from fleeing into the relatively unpopulated Florida wilderness. As mentioned above one way that enslaved people on East Florida’s plantations, and on plantations throughout the South, would resist was by running away. Florida had long been a haven for runaway slaves, with runaways being recorded from the Carolinas as early as the seventeenth century (Rivers 2000:190). Later, as more planters began to move to Florida and the number of slaves increased planters began to notice a relatively high rate of attrition among their enslaved workforce. One white resident of Florida lamented in 1834, “There are few things which have been subjects of greater complaint for the last two or three years than runaway negroes…[they] are permitted to go at large, and plunder the public.” (Tallahassee Floridian 1834 as quoted in Rivers 2000:220). The undeveloped Florida wilderness made for a relatively easy escape but the presence of the Seminole, whose name is thought to be derived from the Spanish word for runaways, also assisted runaway slaves in their quest to flee the plantation.

As a result, plantation owners used many tactics in order to control their workforce and keep their plantations going. As described above, one tactic was to put in place both laws and systems of labor that were less severe than other slave holding areas throughout the South. Another tactic, used not only in East Florida but throughout the South, was ordering of the plantation landscape, especially as it related to slave housing.
Slave quarters from the eighteenth to nineteenth century varied greatly in some respects based on regional factors as well as the size and affluence of the plantations they were attached to (Rivers 2000:133). Slave owners were generally responsible for the construction of such buildings, and as a result they usually took the form of small European-style cabins made of wood or masonry, although most were simply constructed with posts placed into the bare ground (Leone and Silberman 1995:130; Poesch and Bacot 1997:126). Many of the slave quarters on East Florida’s plantations were wood-framed structures, usually with only one room, with wood shingled roofs and open spaces in the walls for windows (Rivers 2000:134). With their two rooms, sleeping attic, and tabby wall construction, living conditions at Kingsley Plantation were much better than at many other places throughout East Florida (although they were still not optimal). On many plantations throughout the region it was also not uncommon for as many as 5 or more people to live together in one small slave cabin (Smith 1973:90). By forcing African slaves to live in unfamiliar and cramped European style houses, instead of more familiar forms brought over from Africa, plantation owners hoped to strip away some of their traditional culture. Also, the poor conditions and lack of protection from the elements were meant to wear down those being enslaved and stop them from revolting.

In addition to the appearance of the slave quarters, the spatial relationship between the main house and the slave quarters also served as a method of control. By manipulating the landscape, slave owners hoped to intimidate as well as naturalize their power. They accomplished this by trying to annihilate African forms of living such as African house styles, but also by controlling the layout and distribution of all the slave quarters. The most popular method was to arrange the slave quarters in European style
layouts, while still keeping them in close proximity to the main house or overseer’s dwelling (Leone and Silberman 1995:130). Slave cabins were also often laid out in linear configurations that ran parallel to the main road leading up to the owner's house (Poesch and Bacot 1997:90). This gave the cabins the appearance of European style village streets, while also allowing the owner and overseers to keep a constant watch over what was going on (Poesch and Bacot 1997:90). Visitors to the main plantation house would pass these small shacks on the way in, demonstrating the power of the owner to control not only the land but the people who worked it.

As described in the previous chapter, the social and cognitive spaces that past people created are just as important to understanding the cultural landscape as the material remains that they left behind. In the case of East Florida, and Bulow Plantation in particular, many outside factors contributed to the shaping of plantation landscapes. Planters’ conceptions of how best to balance sometimes conflicting factors such as security (from forces both outside and inside the plantation), aesthetics, and agricultural needs shaped the way the material landscape was formed at East Florida’s plantations. No one factor can be said to be the most important in understanding the cultural landscape at Bulow Plantation, but all must be taken into account in order for the most complete picture of life there to emerge.
Chapter Six: Results

Historical Maps and GIS Creation

While a few written descriptions remain that describe the structures once found within Bulow Plantation, the only maps depicting the area were created after the plantation’s destruction in January of 1836. Figure 6.1 shows a survey of the area completed in 1850. Only the Bulow Plantation sugar mill and two unidentified structures are depicted but plantation era roads and field lines are also shown, shedding some light on what the area might have looked like during the plantation’s heyday. Also of interest are the historical boundaries of Bulow’s property. At one time the plantation encompassed a large area on both sides of Bulow Creek, but today only a small portion of the core plantation area is protected within the boundaries of the state park.

A later Coastal Survey Map (Figure 6.2) created of the area in 1893 also provides some useful insights into the layout of the plantation. Although no plantation outbuildings such as slave cabins are depicted, other plantation landscape features such as cleared fields, roads, and two unidentified structures are all seen in more detail than what is found on the earlier plat map. Although it is possible that the three black dots situated along the bank of Bulow Creek (Figure 6.2b) are meant to represent structures, their location makes them more consistent with the three plantation era boat slips that are still extant in that area.
Figure 6.1: 1850 Plat map showing the boundaries of Bulow’s property. Today, only a small portion of these lands (outlined in red) are located within the Bulow Plantation State Park. Field lines, as well as historical roads and a few structures related to the plantation, were recorded on the plat map by the surveyor at the time. Image courtesy of the State Archives of Florida.
Figure 6.2: 1893 Coastal Survey Map showing the remains of Bulow Plantation. Several plantation features are indicated A) sugar mill, B) Bulow boat slips or three unidentified structures, C) main plantation entrance road, D) possible fields, E) plantation road to the beach, F) Bulow Creek, G) King’s Road, H) plantation road. Image courtesy of NOAA’s Office of Coast Survey Historical Map & Chart Collection, http://historicalcharts.noaa.gov.

Pedestrian Survey

As a first step toward better understanding the past landscape of Bulow Plantation, a pedestrian survey of the area was conducted in order to locate the remains of any architectural features that might still be visible on the ground surface (Collins and Doering 2009a; Collins et al 2010). Although dense palmetto scrub obscured much of the ground surface in some areas of the State Park property, especially to the south of the park entrance road, numerous clusters of cut coquina block were visible in areas with less underbrush. Figure 6.3 is typical of the surface remains encountered during the pedestrian survey. Especially in the area of the north arc, cut coquina blocks were visible in slightly
mounded areas. Though these blocks were grouped together in defined areas, usually only a few meters in diameter, they did not form any kind of delineated shape such as a foundation wall or other architectural form. In the area of the south arc, far fewer coquina block clusters were visible both due to the heavy palmetto scrub and to the fact that more looting and scavenging of the blocks has occurred on the southern end of the property.

In total, the pedestrian survey located 16 coquina clusters likely associated with the plantation era slave quarters. Of these, 11 were located in the area of the north arc while five were located in the area of the south arc. An additional area of scattered coquina blocks was also located and recorded within the arc area, to the south of the plantation entrance road and just to the south west of the plantation era boat slips. Figure 6.4 details the results of the pedestrian survey. GPS points were taken of possible plantation features, such as the slave cabin area and other unidentified coquina clusters,
Figure 6.4: Plantation era features recorded with sub-meter GPS during the pedestrian survey. (Collins and Doering 2009a; Collins et al 2010)
as well as known plantation remnants such as the main house, sugar mill, spring house, boat slips, and well (Collins and Doering 2009a; Collins et al 2010). As mentioned above, the slave cabin area has been mapped previously (Baker 1991; Baker 1999; Daniel et al 1980; Newman 2005). Figure 6.5 shows an enhanced view of the core plantation area. Historical documents record the plantation era slave quarters as being approximately 150 yards (450 feet) from the main house, but based on the points recorded during the GPS survey the actual location of the slave quarters appears to be a bit farther out. The majority of the coquina clusters nearest to the river, on both the north and south arcs, are approximately 600 feet from the main house. As the arcs curve toward the center point of the main road the coquina clusters become slightly farther away from the house, at a distance of about 700 to 750 feet.

This difference in the distance of certain slave cabins from the main house creates a shape much closer to that of a horseshoe or parabola than to the perfectly surveyed and laid out semi-circle of slave quarters found at Kingsley Plantation (Figure 6.6). Additionally, while the semi-circular of slave cabins found at Kingsley Plantation is set back from the river behind the main plantation house, the slave cabin arc at Bulow Plantation stretches all the way to the water’s edge. This layout completely enclosed the plantation core of the main house and its dependencies at Bulow Plantation, unlike the arc found at Kingsley Plantation which was set much farther back from the plantation core. Part of this might be due to the fact that Bulow Plantation had more slave cabins than Kingsley Plantation, with 46 at Bulow compared to 32 at Kingsley. On the other hand, the cabins at Kingsley were much more closely spaced, only about 20 feet apart (Davidson 2007), while those at Bulow appear to be much more widely spaced at about
Figure 6.5: A more detailed view of the recorded plantation core area.
Figure 6.6: 1853 Coastal Survey map of Kingsley Plantation. Both Kingsley and Bulow Plantations have slave quarters (A) generally arranged in an arc around the main house (B), but in many ways their layouts are actually quite different. Image courtesy of NOAA's Office of Coast Survey Historical Map & Chart Collection, http://historicalcharts.noaa.gov.

50 feet apart. The layouts of Kingsley and Bulow Plantations are often compared, but it is clear that there are some significant differences between the two in terms of the ordering of space within each respective plantation system.

Also of interest when looking at the GPS data from our survey were the differences, and similarities, that emerged between the current and previous surveys of the Bulow slave cabin area (Baker 1991; Baker 1999; Daniel et al 1980; Newman 2005). When compared to the previous survey of the area done by Daniel et al. (1980) in 1979, some differences emerge with the current data both in the cabins recorded and, in some cases, their locations. Figure 6.7 illustrates some of the differences between the two. Survey data from the 1979 project was geo-referenced using park boundaries as a
Figure 6.7: Comparison of old (Daniel et al 1980) and new (Collins et al 2010) survey data.
reference point (Daniel et al. 1980). Although several more coquina clusters were located in the south arc during the 1979 project, those found during the current survey matched well with those found beforehand and at least two additional clusters were also recorded. In the area of the north arc more differences were evident between the old and new survey data. First, the coquina clusters recorded in this study were located approximately 250 feet to the south of those recorded during the 1979 survey. This revised location fits better with what would be expected for the north arc as the cabins are more symmetrical with those found in the south arc. Additionally, at least five more coquina clusters were located in the north arc that were not recorded in the 1979 survey. These differences are most likely due to changes in vegetation that made the ground surface more or less visible in some areas over the years, but when taken together these data give us the most complete picture yet of the slave cabin arc at Bulow Plantation.

**Metal Prospection Survey**

As discussed in the previous chapter, in the areas of Cabins 1 and 2 a metal prospection survey was conducted in order to determine if any intact nail patterns could be discerned. These two areas were chosen due to the relative lack of ground cover obscuring them as well as the fact that the large number of cut coquina blocks still found in each area pointed to the possibility that any archaeological features might be fairly intact. In the area of Slave Quarter 1 (SQ1) (Figure 6.8) numerous hits were detected. The majority of the metal hits were located within the scatter of cut coquina foundation blocks, and in one area five metal hits form a linear pattern almost 1 m in length (Collins and Doering 2009a; Collins et al. 2010).
In the area of Slave Quarter 2 (SQ2) (Figure 6.9), a more distinct pattern emerged during the survey. To start with, the coquina blocks visible at the surface in the area of SQ2 formed linear features, hinting at the possibility that the underlying archaeological deposits might also be fairly intact. Also, the blocks in the area of where the west wall of the structure might have been located conformed well to the building dimensions for the Bulow era slave quarters mentioned in the claims documents (Table 2.1) at around 12 feet in length (3.6 m). While in the area of SQ1 the majority of the metal detector hits were located within the coquina scatter, at SQ2 they were mostly found in linear features just outside the coquina block features. Linear areas of metal detector hits were recorded on each side of what was most likely a plantation era slave cabin, although the hits to the north of the cabin where much more scatter than those found to the east, west, and south. Additionally, a mounded area in the middle of what would have been the slave quarter caused the metal detector to register a very high presence of metal, indicating a high concentration of metal artifacts.

What these data show, especially in the area of SQ2, is that many of the plantation era deposits associated with the slave quarters at Bulow Plantation most likely remain largely intact due to a relative lack of activity and ground disturbance in the area throughout the years. Due to time constraints only these two slave quarters were tested using a systematic metal detector survey. In the future it might be more practical for researchers to use a metal detector survey in order to find the remains of plantation era buildings in areas where most of the coquina blocks have been disturbed or removed. Given the presence of detailed claims documents that record the dimensions of the plantation era buildings, recording historic nail patterns detected in this way could be
Figure 6.8: Metal detector hits recorded in the area of SQ1.
Figure 6.9: Metal detector hits recorded in the area of SQ2.
especially fruitful given the dense understory in some areas of the park that would make a more traditional remote sensing survey, such as ground penetrating radar or magnetometry, quite difficult.

LiDAR Data

In addition to the fieldwork completed at Bulow Plantation, an analysis of aerial LiDAR data was also completed for the area of the main plantation core in order to look for landscape features that would not necessarily be visible to a person on the ground. Figure 6.10 shows an aerial photograph of the plantation core area overlaid with the locations of the coquina clusters recorded in the GPS survey (Collins et al 2010), little of the ground surface is visible due to heavy tree cover and vegetation. Figure 6.11 shows the results of creating a DEM for the plantation core area and a cell size of 1 ft was used. Several large scale landscape features are immediately visible, some modern and some possibly related to Bulow Plantation. Areas of higher elevation are shown in white while areas of lower elevation are shown in black.

Although only a narrow gravel road, the modern loop road that takes visitors to the ruins of the Bulow sugar mill is visible within the DEM. The original plantation entrance road is also visible as a slight linear ridge running through the slave cabin arc. A raised, linear feature extending from the area of the sugar mill to the main road could be a plantation era road like the one shown in Felix Benton’s drawing of the area (Figure 2.8). One other possible feature is a depression running north south along Bulow Creek just to the north of where the main house once stood. In the 1893 Coastal Survey map shown above, see Figure 6.2, feature H appears to be a road running north south in a similar
Figure 6.10: Aerial photograph of the study area overlaid with GPS points recorded as part of the current survey. (Collins et al 2010).
location. During our fieldwork in the area we also noted the linear depression and mapped it using sub-meter GPS, although it was reassuring to see that the feature also showed up in the DEM for the area.

In addition to roads, both modern and historic, the DEM also revealed several other features that are probably related to the plantation era at the site. First are the three boat slips located just to the south of the main house along Bulow Creek. Although these historic boat slips are visible to a person on the ground, and had been mapped previously by Baker (1991; 1999) the fact that they were also visible in the DEM was reassuring in that it showed that even relatively small landscape features such as the boat slips could be picked up by the aerial LiDAR data used in this study. Finally, an additional landscape feature potentially related to the plantation era at the site is the general topography in the vicinity of the slave quarters. An area of higher elevation, represented by white in Figure 6.11, is found within the open space encircled by the slave cabins. The slave cabins seem to skirt this area of high ground for the most part, and in the vicinity of the west arc (near the entrance road) they seem to follow a shallow depression that runs through the area. Whether this is a landscape feature related to the Bulow Plantation era is impossible to say without further fieldwork and archaeological testing, although it is intriguing given the presence of the slave cabin arc in the immediate area.

Figure 6.12 also shows the results of DEM creation for the core area of Bulow Plantation. Contour lines at intervals of 1 foot have been added to highlight topographical features. When the GPS points were overlaid with the DEM of the same area it was possible to see that in some parts of the site the cut coquina blocks coincided with raised
Figure 6.11: DEM of Bulow Plantation showing landscape features.
Figure 6.12: DEM of Bulow Plantation with contour lines. Coquina block clusters are marked in red.
areas that were picked up by the LiDAR data. This ground truthing helped to verify what we were seeing in the LiDAR data. Figure 6.13 shows an area of the north arc where several slave cabins were located during the GPS survey (including SQ1 and SQ2 which were described above). The coquina blocks located in the area of SQ1 all fit within a fairly well defined raised area and the two additional concentrations of coquina blocks are also located on or around similar rises in the topography. Just to the east northeast of SQ1 a similar mounded area is evident from the LiDAR data. Although no coquina blocks were found in this area it is possible that this might also be a slave cabin or other plantation era building. As with any type of remote sensing however, actual archaeological testing would be needed in order to say for sure.

The western section of the slave arc also shows some areas where coquina blocks recorded during the pedestrian survey correspond with topographical features (Figure 6.14). Much like those found at the extreme northern end of the arc, several of the coquina clusters in the west of the arc also coincide with slightly mounded areas. In the area of the arc to the south of the main plantation entrance road however (6.15), these links are not as clear. Perhaps for the same reason that fewer coquina clusters were found in the area, the heavy underbrush, fewer distinct topographical features related to the plantation landscape were found in around the south arc. Although the LiDAR data collected for the area of Bulow Plantation Ruins Historic State Park did not reveal the locations of all the plantation era buildings it did pick up on some landscape features. When paired with a GPS survey or other forms of ground truthing DEMs can be a useful first step in understanding past landscapes.
Figure 6.13: Zoomed in view of area A indicated in Figure 6.12. Coquina Clusters are shown in red.
Figure 6.14: Zoomed in view of area B indicated in Figure 6.12. Coquina clusters are shown in red.
Figure 6.15: Zoomed in view of area C indicated in Figure 6.12. Coquina block clusters are marked in red.
Viewshed Analysis

As a final step in understanding the landscape of Bulow Plantation, a viewshed analysis was conducted using the DEM created from aerial LiDAR data. As a first step in doing this, I wanted to see what sort of vegetation or ground cover might have been within the area of the slave cabin arc. If the area were forested as it is today then the trees and vegetation would have obscured any view of the slave cabins from the main house. Figure 6.16 shows the result when the GPS survey data is overlaid with an 1893 Coastal Survey map (Figure 6.2) of the area. As this map shows, and as indicated by a contemporary account (discussed above), the central plantation core area appears to be cleared for agricultural fields while a more forested area is found between the slave

Figure 6.16: 1893 Coastal Survey map overlaid with GPS points from the current survey.
cabins and the sugar mill. An 1850 plat map of the area, (Figure 6.1) also seems to show that the area was cleared for fields, although on this map the cleared area stretches beyond the sugar mill. Unfortunately, there are no maps of the area from the time the plantation was in operation so it is impossible to say with absolute certainty what the natural environment of the area was like. However, when taken together, all the lines of evidence point to the probability that the plantation core area was cleared and contained some agricultural fields.

Given that the plantation core area was likely quite clear during the time it was in use, the next step was to complete a viewshed analysis for the area. Figure 6.17 shows the results of a viewshed analysis when the observation points are set at the slave quarters, at a height of 5.78 ft (consistent with an adult standing at ground level). As would be expected, the area of highest visibility is directly around the slave cabins themselves and the level of visibility drops as you go out toward the main house. One issue with this analysis that should be kept in mind, these results only show what area of the ground surface itself is visible to the observer, not taking into account anything (such as a person or structure) that might be on top of the bare ground. This factor means that the micro-topography of the relatively flat area is exaggerated and causes areas of the ground surface to be shown as not visible when a person or building in the area would in fact be visible (see discussion below). With that in mind, Figure 6.17 shows that even with this issue the ground surface in the area of the main house is still largely visible to observers located a the slave cabins. This indicates that not only was the main house visible to the cabins, but the residents of the cabins were most likely visible to the residents of the main house.
Figure 6.17: Results of a viewshed analysis looking from the slave cabins to the main house area, where the viewer height is set at 5.78 ft.
Although it was useful to see what areas of the ground surface would have been visible to an individual standing at ground level, as a next step I was interested to see what would be visible to an individual standing on the second floor of the main house (a height of 15.75 ft). Figure 6.18 shows the results of this viewshed analysis. For this analysis I was also able to add the shapes of the slave cabins (both the ones we recorded during the GPS survey and some conjectural ones placed in the areas in between) to the DEM so that the structures could be taken into account in the viewshed analysis. As seen in Figure 6.18, the area around the main house had the highest degree of visible ground surface while the degree of visible ground surface began to decrease as it got closer and closer to the slave cabins. One interesting feature to note is that this viewshed analysis shows that the cabins would have screened the areas behind them from view of the main house.

Although the above viewshed analyses did give some insight into what areas of the ground surface were visible to the residents of Bulow Plantation, I was also interested to see if the slave cabins themselves (or a person standing in the vicinity) would be visible. In order to get around the issues I found with the viewshed analysis (described above) I got around the problem by creating lines of sight from the main house to the slave cabins (Figure 6.19). I then used these lines to capture a profile of the ground surface elevations between the main house and each slave cabin area we recorded. When these data were later exported into Microsoft Excel I was then able to create a line graph that represented the topography along each line of sight. By doing this, I was able to see for myself whether lines of sight from the first (5.78 ft observer height) and second (15.75 ft observer height) floors of the main house would be interrupted by the
Figure 6.18: Results of a viewshed analysis where the observation point is located at the main house and the viewer height is set at 15.75 ft. Slave cabins have been added to the DEM in order to see how the structures would affect the viewscape.
Figure 6.19: Lines of sight between the main house and the slave quarters. These lines were used to create profiles of the topography between each slave cabin and the main house (See Appendix A).
intervening ground surface topography when looking at a person at the slave cabins (not just the ground surface). Figure 6.20 shows the results for SQ1 (See Appendix A for the line graphs showing individual lines of sight and topography for each of the other slave cabin), the results of this analysis are also summarized in Table 6.1. For each slave cabin the first thing Table 6.1 shows is the height of the observer at the main house (this is the base elevation plus the height of the observer), both for an observer standing on the first floor and one standing on the second floor. Next, the highest elevation for the topography between the main house and the individual slave cabin is given. Finally, the height of the person being observed at the slave cabin it recorded, this number is the height of the base elevation at the point where the slave cabin is located plus the height of an average person (5.78 feet as discussed above). In order for the observed person at each slave cabin to be visible, one would expect that the highest elevation for the area between the

Figure 6.20: Ground surface profile and lines of sight from the main house to SQ1. The blue dashed line is from the second floor and the red dotted line is from the first floor.
Table 6.1: Results of an analysis of lines of sight between the main house and the slave cabins.

<table>
<thead>
<tr>
<th>Slave Quarter Number</th>
<th>Observer Height at Main House (feet)</th>
<th>Highest Elevation Between Main House and Slave Quarter (feet)</th>
<th>Observed Height at Slave Quarter (base elev. + 5.78 ft)</th>
<th>Distance from House to Slave Quarter (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st Floor</td>
<td>2nd Floor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQ1</td>
<td>10.42</td>
<td>20.39</td>
<td>4.97</td>
<td>9.11</td>
</tr>
<tr>
<td>SQ2</td>
<td>10.42</td>
<td>20.39</td>
<td>4.96</td>
<td>8.80</td>
</tr>
<tr>
<td>SQ3</td>
<td>10.42</td>
<td>20.39</td>
<td>5.32</td>
<td>9.28</td>
</tr>
<tr>
<td>SQ4</td>
<td>10.42</td>
<td>20.39</td>
<td>4.95</td>
<td>10.21</td>
</tr>
<tr>
<td>SQ5</td>
<td>10.42</td>
<td>20.39</td>
<td>6.95</td>
<td>12.61</td>
</tr>
<tr>
<td>SQ6</td>
<td>10.42</td>
<td>20.39</td>
<td>7.84</td>
<td>13.08</td>
</tr>
<tr>
<td>SQ7</td>
<td>10.42</td>
<td>20.39</td>
<td>7.73</td>
<td>11.93</td>
</tr>
<tr>
<td>SQ8</td>
<td>10.42</td>
<td>20.39</td>
<td>7.64</td>
<td>10.63</td>
</tr>
<tr>
<td>SQ9</td>
<td>10.42</td>
<td>20.39</td>
<td>8.38</td>
<td>11.16</td>
</tr>
<tr>
<td>SQ10</td>
<td>10.42</td>
<td>20.39</td>
<td>7.89</td>
<td>11.64</td>
</tr>
<tr>
<td>SQ11</td>
<td>10.42</td>
<td>20.39</td>
<td>7.70</td>
<td>11.56</td>
</tr>
<tr>
<td>SQ12</td>
<td>10.42</td>
<td>20.39</td>
<td>8.18</td>
<td>11.58</td>
</tr>
<tr>
<td>SQ13</td>
<td>10.42</td>
<td>20.39</td>
<td>8.17</td>
<td>10.78</td>
</tr>
<tr>
<td>SQ14</td>
<td>10.42</td>
<td>20.39</td>
<td>6.03</td>
<td>10.40</td>
</tr>
<tr>
<td>SQ15</td>
<td>10.42</td>
<td>20.39</td>
<td>5.63</td>
<td>9.42</td>
</tr>
<tr>
<td>SQ16</td>
<td>10.42</td>
<td>20.39</td>
<td>4.73</td>
<td>8.85</td>
</tr>
</tbody>
</table>
main house and the slave quarter would be lower than both the height of the observer and the height of the observed. A quick scan of Table 6.1 shows that for all the slave cabin areas this is the case. What this means is, although in some of the slave cabin areas the ground surface might have been obscured by the intervening topography, in all cases a person in the area of the slave quarters would have likely been visible to an observer on either the first or second floor of the Bulow Plantation main house.

Using ArcScene to view the data in 3D I was also able to visualize what the view might have been like from the main house during the time the plantation was in use (Figure 6.21). As you can see below, for an observer standing at ground level (5.78 ft) all the slave cabin structures are visible to some extent. The cabins at both the northern and southern extremes are the most visible, but the cabins to the west near the entrance road are slightly obscured by the area of higher elevation within the yard area (discussed above). Figure 6.22 shows a panoramic view of the plantation core area as it might have been seen by an observer positioned on the second floor of the main house (at a height of 15.75 ft). As with the previous example all the slave cabins are visible to the viewer at this elevation, although they appear to be slightly less obscured by the small change in elevation that is found in the yard area.

What these recreations show is that although they were placed far from the main house, the slave cabins at Bulow Plantation were still fairly visible to an observer in the area of the main house. The visibility of these small houses, as well as that of the yard that stretched between enslaved and enslaver, was only increased when the observer moved to the second floor of the main house. However, this should be taken only as a
Figure 6.21: Panoramic view from the main house area where viewer height is set to 5.78 ft. This panorama begins (top) where the south arc meets Bulow Creek and continues around until it reaches the point where the north arc meets Bulow Creek (bottom).

general indication of what might or might not have been visible in the past. First, as discussed previously, the DEM created for this area is a palimpsest of all the landscape changes that have occurred in the area through time and not an exact replica of what it would have looked like during the time when Bulow Plantation was in operation. Although very little in the way of landscape altering activity has gone on in the area, this
Figure 6.22: Panoramic view from the main house area where viewer height is set to 15.75 ft. This panorama begins (top) where the south arc meets Bulow Creek and continues around until it reaches the point where the north arc meets Bulow Creek (bottom).

factor is still worth keeping in mind. Also, this analysis does not take into account any other structures of vegetation that might have at one time existed in the yard area. Based on the presence of several coquina scatters in the area directly to the south of the main
house it is likely that several structures or dependencies were located there during the plantation era. Also, it was common on plantations of this time to have dependencies directly to the side of the main house in keeping with Georgian architectural ideals (Lewis 1985:38). This type of layout can be seen at Kingsley Plantation where outbuildings and even a sugar mill were located just to the side of the main house while other structures such as a large barn were also situated within the yard area (Davidson 2009). Keeping these factors in mind, it is still quite possible that much of the view from the main house would have remained unobstructed thus allowing the slave cabins to remain visible for the most part from that vantage point. Only through further subsurface archaeological testing can the viewscape of Bulow Plantation be more fully understood, but by combining LiDAR derived DEMs with information on building locations from historical documents and GPS survey we can begin to get a better idea of what life was like at Bulow Plantation (Figure 6.23).
Figure 6.23: The viewscape at Bulow Plantation. A DEM is overlaid with 3D representations of plantation structures, slave cabins connected to the main house with lines of sight are those that were recorded during the GPS survey. All others are conjectural.
Chapter Seven: Conclusions

So what do the results of this study mean in regards to the material space at Bulow Plantation? Although it was not possible, either through the pedestrian survey of the plantation area or through an analysis of the aerial LiDAR data, to positively identify areas that might be consistent with the known dimensions of the Bulow Plantation outbuildings, many new slave cabins were located and recorded. When these new data are combined with the locations of slave cabins located in a previous survey a more complete picture of the Bulow arc can be assessed. As discussed above 16 cabins were located in the current study through a pedestrian survey, and when combined with those found previously this number climbs to 22 cabins. Unlike Kingsley Plantation where the slave cabins are located in a smaller arc away from the main house, at Bulow the slave cabin arc formed a semi-circular perimeter stretching from the main entrance road to the creek that ran behind the main house. The main house area, its dependencies, and the intervening yard area would have been completely enclosed by the 46 slave cabins that were once part of Bulow Plantation. But why might such a layout, found only at these two plantations within what was once East Florida, make use of such a unique arrangement? There are three different ideas regarding the possible inspiration behind the arc layout, but all have more to do with the possible ideas of social and cognitive space that developed as a result of the unique combination of factors that affected the
development of East Florida in general than with the material space of the plantations themselves.

The first explanation for the slave arc layout that I will discuss here is that it was designed as a means of defense. As described above, East Florida at the time when these plantations were in operation was sparsely populated by white settlers and still very much a frontier wilderness. Kingsley had already suffered the destruction of his previous plantation during the Patriot Rebellion and so would have been acutely aware of how important it was to protect his investment. Also, despite the fact that many planters traded regularly with the Seminole, the presence of a relatively large Native American population within the interior of the state had to be a point of concern for East Florida’s planter class. Not only were they a possible source of hostility toward future white settlement and development, but also a haven for runaway slaves that had been able to escape the plantation.

An arc of slave cabins around the main entrance road might have served as a buffer between any hostile outside forces and the planter, especially at Bulow Plantation where the entire plantation core area was enclosed. Archaeological excavations at Kingsley Plantation have shown evidence, in the form of gunflints found within the slave cabins, that the enslaved population was in fact armed. This would have been against laws at the time that forbid slaves access to firearms, but might have been necessary given the relatively hostile environment. Also, based on accounts at the time Kingsley’s house was said to be heavily fortified and like Bulow, Kingsley was said to have a cannon in order to defend his property (Davidson 2007:42-43). In addition to this, the
location of both houses near a river would have provided a quick means of escape for the planter should any threats be detected by the first line of defense.

The location of the other plantation buildings at Kingsley Plantation also points to a possible concern for defense. After his investment in his enslaved workforce, the largest investment of capital would have gone to equipment (especially if a sugar mill was present), outbuildings, and stores. At Kingsley many of these structures, including a possible sugar mill (Davidson 2009:22) were located in an area close to the main house and within the slave cabin arc. Although it appears from the presence of several scatterings of coquina foundation blocks in the area directly to the south of the Bulow main house that some outbuildings or dependencies might have been located in a similar configuration at that plantation, the location of the sugar mill does not fit with the model of Kingsley Plantation. As mentioned previously, at Bulow the coquina sugar mill (estimated to be worth around $30,000 in claims documents filed after the plantation’s destruction) was located outside the arc. This was most likely in order to take advantage of a natural spring that was used to power the steam engine that ran the mill, however if security of investment was the concern it placed a valuable asset outside the probable first line of defense.

A second theory as to why the slave cabins at Kingsley and Bulow Plantations might have been arranged in an arc relates to the need to protect against threats not from outside but from within the plantation itself. Planters didn’t necessarily want their slaves living at their doorstep, but it is also likely that they were interested in keeping an eye on what their enslaved workforce was up to. As Stowell (1996:73) points out in regards to the Kingsley arc “[its] position astride Palmetto Avenue approximately one thousand feet
from the Plantation House put the slaves near enough to the Plantation House to be monitored but far enough away to be spatially segregated from the master’s family and his guests.” Although this configuration might have also provided a measure of privacy from their neighbors for the families living within the cabins, Stowell also makes the point that “the relative proximity to the Plantation House may have provided the master with the best opportunity to observe and control his slaves” (Stowell 1996:73). Also, at Kingsley slightly larger cabins for the overseer or driver were situated nearest to the road within the arc. As Walker (1988:111) this might have been done “as a form of social control in the community.”

As discussed in the previous chapter, the environment of East Florida made it necessary for planters to not only guard against outside threats such as marauding “Patriots” or Seminole warriors, it was also imperative that they guarded against losing their enslaved workforce to escape. Although relatively lax laws (in comparison to the rest of the slave-owning South) and the use of the task system might have been put in place to try to ease the conditions that East Florida’s enslaved population found themselves in, it is also possible that this “largesse” was balanced with a need for control. As previously discussed, several researchers have examined the use of surveillance and control within plantation landscapes (Delle 1998, Singleton 2001).

One method of surveillance, known as panopticism, was developed in the Eighteenth century by Jeremey Bentham (Epperson 2000:58). Originally designed as a means of institutional control, the panopticon:

consists of an observation tower within a large circular courtyard surrounded by an annular cellblock…Each cell should be occupied by
only one surveillant who is subject to constant observation from the tower; yet the design of the panopticon simultaneously prevents communication between inmates. Ideally, the central tower is screened, so the inmates never know who (if anyone) is in the observatory at any particular time (Epperson 2000:58-59).

The hoped for result of such a configuration is that the inmates will feel like they are constantly being watched, even if that is not the case, and therefore police themselves.

The use of such a layout in an industrial setting can be seen most clearly in Claude-Nicolas Ledoux's late Eighteenth Century Saline de Chaux, a salt works located in France (Vidler 2006:47). Ledoux planned the salt works at Chaux as a self contained industrial community that consisted of buildings such as a salt works, worker's housing, and bakery (Vidler 2006:49-50, 53) arranged in a semi-circular layout which was then centered on an administrative structure where the factory director had his offices (Vidler 2006:47). Through the classical forms he used, Ledoux created an architecture of surveillance which was based on an "axis of power" leading straight from the entrance of the arc to the director's house at the center of the salt works (Vidler 2006:50). He prized what he saw as the virtues of the semi-circular plan: the ability to create lines of sight which led back to a single place of power. Chaux's semi-circular plan allowed the overseer to "comprise in a single glance the details under his supervision… nothing escapes his surveillance" (Vidler 2006:51), this not only allowed him to view everything that was going on, but also gave the workers a constant sense of being watched (similar to Bentham's Panopticon). Also, for Ledoux, the central point of the director's house was meant to become an example for workers to strive toward, "a source of light illuminating everything and a place of convergence for everything that should be seen: the perfect eye from which nothing escapes and a centre towards which all gazes are turned" (Vidler 2006:51).
It is rare, if not impossible, to find a literal panopticon within a plantation context, but some of the ideas and methods behind Bentham’s “panopticism” have been observed (Epperson 2000; Chidester 2009; Singleton 2001). In his examination of George Mason’s Gunston Hall and Thomas Jefferson’s Monticello, Epperson (2000) explores the importance of what he deems panopticism in understanding each respective landscape. At Gunston Hall, lines of perspective were manipulated in order to “construct a landscape that exists for only one privileged viewer” (Epperson 2000:63) while at Monticello Jefferson manipulated his plantation landscape in order control what was (the fine view of a nearby mountain) and was not visible (any trace of his enslaved workforce) to his guests (Epperson 2000:68). At Ferry Hill Plantation in Maryland, Chidester (2009) also examines how planters manipulated the landscape in order to control what was and was not visible from certain vantage points. Situated at the top of a bluff, the plantation house at Ferry Hill provided a good vista of the entire plantation operation, allowing the owner to observe the enslaved workers at his ferry boat crossing from afar (Chidester 2009:45). Contemporary accounts report that his enslaved workforce was unable to tell when he was watching them (Chidester 2009:46).

As described previously, one way to examine what was visible within a past landscape is to conduct a viewshed analysis using ArcGIS. A preliminary viewshed analysis study completed for Kingsley Plantation (Gonzalez-Tennant 2007) showed that when modern vegetation was removed from the landscape the slave cabins and yard area were in fact visible from the main house. Similarly, a more in depth analysis of the viewshed of Bulow Plantation, described above, revealed that despite their distance from the main house the slave cabins would have been visible to an observer at the plantation.
house. Also, much of the intervening yard area would have also been visible, although the degree of visibility was dependent both on the elevation of the viewer and the distance from the main house.

However, a semi-circular design and visible slave cabins do not a panopticon make, and without specific mention in the historical documents of the principles of panopticism being used to construct a plantation landscape it would be wrong to attribute that motivation to the architect. No such information exists in regards to the layout of either Bulow or Kingsley Plantations. Although it is unlikely that such proof would be found for any plantation, through a careful examination of archaeological evidence, in the form of material culture that indicates resistance to the enslaver’s gaze, it might be possible to inch toward a greater understanding of the use of panopticism in the plantation landscape. For example, at Kingsley Plantation evidence has been uncovered that the enslaved residents of the arc constructed porches on the back side of their houses (the side facing away from the main house) (Davidson 2007:47-49), while within their homes they created their own meaningful landscape by burying charms and items of religious significance beneath their floors (and out of view of the plantation owner) (Davidson 2009:17-20). Like what has been done at Kingsley Plantation, future archaeological research at Bulow Plantation should look at the distribution of activity areas in relation to the view of the main house in order to see if there is any evidence of the plantation’s enslaved population reacting against the constant gaze of the main house.

A third possibility that has been advanced is that the arc at Kingsley Plantation is inspired by African traditions, namely “Wolof spatial usage and social patterns” (Schafer 2003:53). Kingsley’s wife, Anna Madgigine Jai Kingsley, was born in Senegal and was at
one time a slave of his until gaining her freedom. As Kingsley was often gone from the plantation on business it is thought that Anna did much in the way of running the plantation (Schafer 2003:47). In the Wolof villages that Anna would have lived in as a child a circular layout centered on an open area was common for individual family compounds (Schafer 2003:55). The location of the plantation main house in the center of this open area also fit with West African ideas about where the house of the most powerful person in the village should be located:

The design also followed a pattern of deference to male authority seen among the Wolof, whereby the focal point of the village community was traditionally the dwelling of the master situated at the north end. According to Wolof paternal protocol, visitors would pass first through the men and women of the slave community before advancing to the residence of the “father,” or family head. (Schafer 2003:56)

It would have been advantageous for a planter, especially Kingsley, to make use of these traditions (whether knowingly or serendipitously) in order to place himself in the location of the head of the family. As with the other two explanations, it is impossible to say whether the arc was inspired entirely by Wolof cultural traditions, or whether, as with many cross-cultural encounters, it is simply an example of two different groups making use of similar symbols. It would raise questions however regarding how such a strong West African cultural landscape came to be instituted at Bulow Plantation.

In terms of Bulow Plantation, it is impossible to say at this point what one explanation inspired the arc of slave cabins there. Unlike Kingsley Plantation, little subsurface archaeological work has been done at Bulow, and without some sort of documentary or material evidence it would be difficult to say that one interpretation was more valid than another. In fact, it is possible that all three of these explanations factored
into the development of the material, social, and cognitive space of Bulow Plantation.
The nature of cultural landscapes means that they can have multiple, or even conflicting, connotations depending on the viewer and the circumstances they find themselves in. A white planter might see their plantation landscape as a symbol of their power and control over both nature and his fellow man, but an enslaved African living within that same landscape might have very different perceptions or ideas based on their own culture and experience. As discussed previously, power relations between enslaver and enslaved were not a one way street. Although not always as visible in the traditional historical record, the enslaved workers on East Florida’s plantations dealt with their situation by finding ways to resist. Sometimes that involved feigning illness in order to get out of work, while other times it might have included building a porch on the back of their small slave cabin or burying items of religious significance beneath the floor of their home. These tactics were often not recorded in the history books, but through archaeology we can begin to discover the other side of the story in regards to plantation life. Archaeology is truly at its best when it seeks to tell these secret or forgotten histories. This work is only a small start in understanding the lives of those who called Bulow Plantation home, but it is hoped that future archaeological work here can reveal more about the lives of the enslaved population.
References Cited

Ackermann, F.

Anschuetz, K. F., R. H. Wilshusen and C. L. Scheick

Ascher, R. and C. Fairbanks

Audubon, J. J.

Baker, H. A.


Baker, V. G.

Barile, K. S.
2004 Hegemony within the Household; the Perspective from a South Carolina Plantation. In *Household Chores and Household Choices: Theorizing the*
Battle, W.

Benton, F.
1934  A Reconnaissance of the Volusia Coastal Hammocks to Determine the Most Suitable Location for a State Forest Park. Submitted to the Florida Forest Service. Copies available from the Department of Environmental Protection.

Bewley, R. H., S. P. Crutchley and C. A. Shell

Chapman, H.
2006  Landscape Archaeology and GIS. Tempus, Briscombe Port, Gloucestershire.


Chidester, R. C.

Clark, W. A.

Collins, L.D. and T. F. Doering

Collins, L. D., T. F. Doering, and S. Fernandez

Connor, M. and D. D. Scott

Conolly, J.
2008  Geographical Information Systems and Landscape Archaeology. In Handbook of Landscape Archaeology, edited by B. David and J. Thomas, pp. 583-595. Left Coast Press, Walnut Creek, CA

Cusick, J. G.

Daniel, R., F. Sicius, and D. Ferro

Davidson, J. M.


Deetz, J.
Delle, J. A.


Devereux, B. J., G. S. Amable, P. Crow and A. D. Cliff

Epperson, T. W.

Fairbanks, C.


Fennell, C. C.

Florida Department of Environmental Protection
2003   Addison Blockhouse Historic State Park, Bulow Creek State Park, Bulow Plantation Ruins Historic State Park, Tomoka State Park, Multi-Park Unit Management Plan, edited by Florida Department of Environmental Protection, Tallahassee.

Florida Department of State
Fox, R. A., and D. D. Scott  

Gaffney, C.  

Gluckman, S. J., and H. A. Baker  

Gonzalez-Tennant, E. and D. Gonzalez-Tennant  

Gordon, E.  

Grange, R. T.  

Griffin, J. W.  

Griffin, P. C.  

Harmon, J. M., M. P. Leone, S. D. Prince and M. Snyder  
Hauser, M. W.

Hood, J. E.

Knapp, B. A. and W. Ashmore

Leone, M. P.

Leone, M. P., E. Kryder-Reid, J. H. Ernststein and P. A. Shackel

Leone, M. P. and P. B. Potter

Leone, M. P. and N. A. Silberman

Lewis, K. E.
Liu, Xiaoye

Mahon, J. K. (editor)

Morgan, P. D.

Newman, C.

Ogburn, D. E.
2006  Assessing the Level of Visibility of Cultural Objects in Past Landscapes. *Journal of Archaeological Science* 33:405-413

Ormond, J.

Orser, C. E.

Orser, C. E. and A. M. Nekola

Otto, J. S.
Payne, T. M. and P. C. Griffin

Poesch, J. and B. S. Bacot

Proby, K. H.

Rivers, L. E.

Rotman, D. L. and M. S. Nassaney

Schafer, D. L.

Schmidt, A.

Singleton, T. A.


Smith, J. F.
Smith, W. W.
1836  *Sketch of the Seminole War and Sketches During A Campaign*  

Souder, W.

Stanton, E. P.

Stine, R. S. and L. F. Stine

Stowell, D. W.
1996  *Timucuan Ecological and Historical Resource Study.* U.S. Department of the Interior, National Park Service, Southeast Field Area, Atlanta, GA.

Strickland, A.

Thomas, B.

United States Senate
1846  *Documents in Relation to the Claim of the Executor of John J. Bulow to be Indemnified for the Loss of Property Destroyed by the Hostile Seminole Indians.* Copies available from the Florida Park Service Archive.

Vidler, A.

Vlach, J.
Walker, K. J.

Wayne, L. B.

Wayne, L. B., M. F. Dickinson, and G. A. Hall

Westcott, K. L. and R. J. Brandon (editors)

Wheatley, D. and M. Gillings

Willey, G. R.

Wilson, R. D.

Wittkower, R.
Appendix A:

Additional Figures
Appendix A (Continued)

**Figure A1:** Ground surface profile and lines of sight from the main house to SQ2. The blue dashed line is from the second floor and the red dotted line is from the first floor.

**Figure A2:** Ground surface profile and lines of sight from the main house to SQ3. The blue dashed line is from the second floor and the red dotted line is from the first floor.
Figure A3: Ground surface profile and lines of sight from the main house to SQ4. The blue dashed line is from the second floor and the red dotted line is from the first floor.

Figure A4: Ground surface profile and lines of sight from the main house to SQ5. The blue dashed line is from the second floor and the red dotted line is from the first floor.
Appendix A (Continued)

Figure A5: Ground surface profile and lines of sight from the main house to SQ6. The blue dashed line is from the second floor and the red dotted line is from the first floor.

Figure A6: Ground surface profile and lines of sight from the main house to SQ7. The blue dashed line is from the second floor and the red dotted line is from the first floor.
Appendix A (Continued)

Figure A7: Ground surface profile and lines of sight from the main house to SQ8. The blue dashed line is from the second floor and the red dotted line is from the first floor.

Figure A8: Ground surface profile and lines of sight from the main house to SQ9. The blue dashed line is from the second floor and the red dotted line is from the first floor.
Appendix A (Continued)

Figure A9: Ground surface profile and lines of sight from the main house to SQ10. The blue dashed line is from the second floor and the red dotted line is from the first floor.

Figure A10: Ground surface profile and lines of sight from the main house to SQ11. The blue dashed line is from the second floor and the red dotted line is from the first floor.
Appendix A (Continued)

Figure A11: Ground surface profile and lines of sight from the main house to SQ12. The blue dashed line is from the second floor and the red dotted line is from the first floor.

Figure A12: Ground surface profile and lines of sight from the main house to SQ13. The blue dashed line is from the second floor and the red dotted line is from the first floor.
Appendix A (Continued)

Figure A13: Ground surface profile and lines of sight from the main house to SQ14. The blue dashed line is from the second floor and the red dotted line is from the first floor.

Figure A14: Ground surface profile and lines of sight from the main house to SQ15. The blue dashed line is from the second floor and the red dotted line is from the first floor.
Appendix A (Continued)

Figure A15: Ground surface profile and lines of sight from the main house to SQ16. The blue dashed line is from the second floor and the red dotted line is from the first floor.