PLANNING FOR LANDSCAPE CHANGE: HOW MAPS AND APPS PROMOTE HERITAGE TOURISM THROUGH CULTURAL LANDSCAPE INTERPRETATION

by

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(Under the Direction of Rosanna Rivero)

ABSTRACT

This thesis draws a connection between the intentions of both historic and present-day mapmakers to illustrate how maps are used to interpret the landscape for promotional purposes. A study of the cultural significance of historic landscapes, along with a comparison of spatial histories that use maps as a means of storytelling, will result in the development of a spatial history of the study area, McIntosh County, on the coast of Georgia. The importance of this study is to illustrate the value in storytelling through maps and their potential for use in promoting economic development through heritage tourism.

INDEX WORDS: maps, cultural landscape, heritage tourism, environmental history spatial history, digital history.

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CHAPTER 1

INTRODUCTION

We write, with our actions, the history of our daily lives on the landscape within which we work, eat, pray, learn, enjoy. Every action leaves an impression on the physical and now digital landscape: the footpaths we groove across an empty lot, the monuments we erect to commemorate events, our tweets that are recorded globally when important events occur. All of these actions can be depicted on maps because all of our actions take place within the landscape. Landscapes can be as small as our front yard or as large as our entire globe. Maps are a product of our culture. Their lines, symbols and colors represent the cultural record of our actions. Understandably, maps change as our culture evolves. A tweet map is one example of how culture has changed the content and our conception of what maps are and what they can do.

Humanistic geographer, Yi-Fu Tuan, distinguished between 'space' and 'place.' 'Place' is 'space' that has received man's imprint (Tuan 2014). It is where culture has left its mark. A landscape can be defined as "the interface between people and place" (Lozny 2006). Identifying and preserving the tangible and intangible impressions on the cultural landscape is important because without its uniqueness, every place will come to look like every other place.

We can see evidence of this at many exits on most highways in the United States where the same franchise restaurants purport to nourish us. We can see this in every major shopping center that sports the same ten stores. It's comforting to know we can

buy what we need when we travel away from home, but the homogenous landscape leaves nothing to the imagination or our curiosity except the repetitiveness of viewscapes.

Maps act as a permanent record of a landscape at a particular point in time. The theories within critical cartography postulated by J.B. Harley and others beginning in the 1980's, contends that "cartographic facts are only facts within a specific cultural perspective" (Harley 2001). Maps are better understood within their historical context because they were configured based on the available knowledge and prevailing cultural attitudes of the time. The representation of landscape elements on the map is influenced by the purpose of the mapmaker (and/or his sponsor). This new and ongoing understanding of maps and the widespread use of the software that enables computer generated maps have led to an explosion of alternative motives for map making from creative personal expression to the depiction of egalitarian cultural views to the documentation of vernacular cultural historical records.

The grid-work pattern of water-filled troughs within the marshes along Georgia's coastal counties that can still be seen today on Google map images, are the irrigation ditches and dikes constructed by African slaves who had transformed much of the Southern coastline into rice plantations dating back to approximately 1670 in South Carolina and 1750 in Georgia, after Georgia's ban on slavery was lifted. The tangible evidence of their endeavors within the landscape and on Google maps tells a powerful story about the prevailing culture of the time period. The fact that in over one hundred years the natural forces of the weather and tides did not blur the troughs and dikes into their original constituents of sea grass or cedar swamp serves as a legacy of the local human impact on the environment. Their visibility on the digital map means that this

legacy can be known to anyone with an internet connection who googles the area. David Lowenthal writes that, "Awareness of the past is essential to the maintenance of purpose in life; without it we would lack all sense of continuity, causality and identity." (Lowenthal 1979)

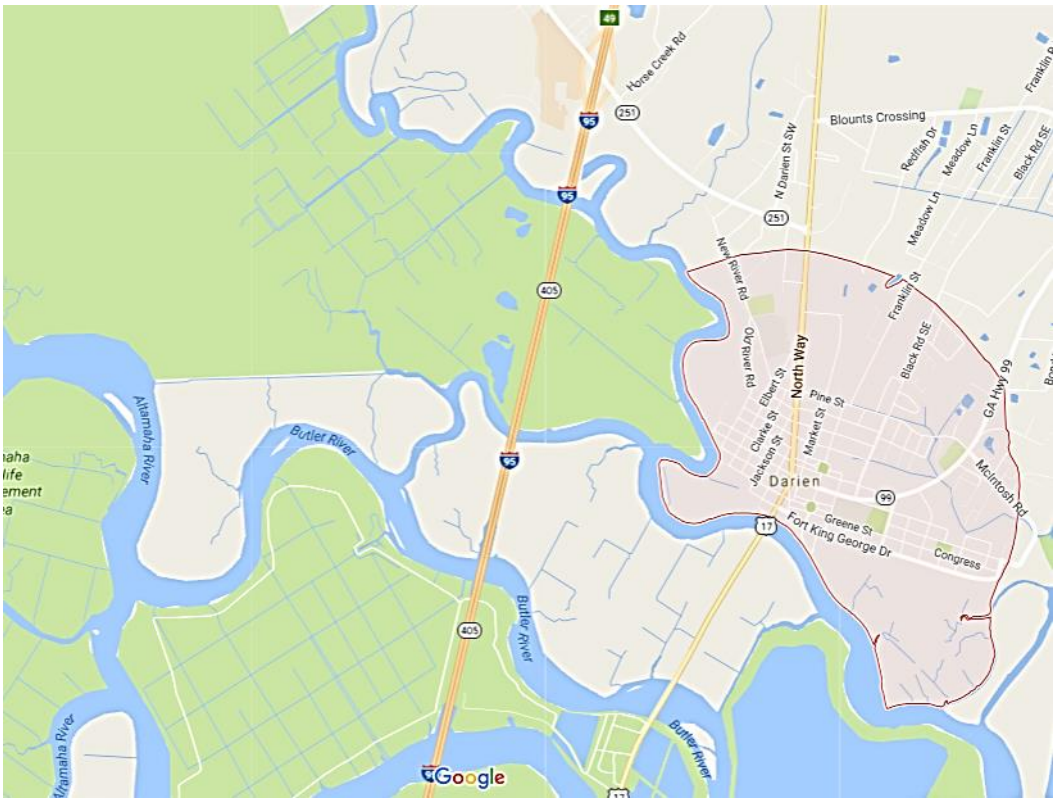

Fig.1 Google map of Darien, Georgia (McIntosh County) (Google Maps, 2017) Accessed January 2, 2017

Landscapes are the connection between people and place along which time marches and modifies. Maps and the landscapes they represent are both the media within which all stories of the past can be told. History is written in the remnants of earlier landscapes that have been left by past generations. Sometimes we have preserved these memories well because they belonged to important citizens and sometimes we have let these become ruins or built over them. Landscapes and their maps tell the stories of

cultures that are tied to region or local context with which distinctiveness is forged. (Lozny 2006) Certainly each large region of our country has its own identity, South, North and West and within those there are broad as well as local narratives.

This thesis will explain the cultural intentions underlying the symbology within *historical* maps and the potential within *digital* maps for telling stories for the purposes of cultural heritage tourism. This will be demonstrated within the study area of coastal Georgia, specifically McIntosh County and the city of Darien. Since the development of critical cartography, scholars have been critiquing both recent and historic maps to reveal the underlying or hidden intentions of the mapmakers. Several colonial maps have been analyzed by scholars in order to illustrate how mapmakers manipulated map elements with the specific intention of painting a more positive picture of the colonies in order to promote colonial settlement. Other historians are interpreting the histories of diverse citizenry or diverse historical events to create digital history websites that paint a more comprehensive picture of life in the United States (and elsewhere). And others are utilizing digital mapping technology to enhance understanding of culture and landscapes for the education and entertainment of cultural heritage tourists. This thesis will explore how the intentions of mapmakers can be used for the promotion of landscapes for a variety of reasons, which will ultimately result in a spatial history illustrating this process for the McIntosh County, Georgia.

CHAPTER 2

METHODOLOGY

An interpretive thesis is formulated around the concept that "the meanings of objects, events, words, actions, and images are not always plain and obvious, and they require the investigator to actively engage in making sense of the phenomena…" (Deming and Swaffield 2011). Analysis and interpretation, of both past and present perceptions about the landscape, and actions that shaped the landscape, was undertaken. Insight was gained by the examination of landscape characteristics and the maps, text, and images that have recorded the landscape. The aesthetic, social, economic and ecological forces that shaped the landscape were evaluated, in order to detect patterns in, and results of, landscape change. Interpretation of coastal McIntosh County landscape characteristics was completed within the medium of maps and their ability to tell stories.

In order to perform a descriptive and interpretive analysis of McIntosh County's environmental history, it was necessary to be familiar with and assess the prior research involving the resources of the study area. All of these documents tell a story of the environment as it existed in the past, exists today, or as it will be designed for the future. The following documents were reviewed:

- McIntosh County Historic Survey Report, Phase I
- McIntosh County Spring 2015 Tourism Resource Team Report
- Telling Time by the Tides, an Archeological and Historical study of the Cathead Creek Historic District

- Darien Multi-Use Trail Masterplan
- The Altamaha Scenic Byway Corridor Management Plan
- The West Darien Historic District National Register nomination form
- The Altamaha, a Scenic & Recreational River Proposal
- Darienport, An Environmental Tourism Program for McIntosh County, Georgia

When discussing any landscape and its maps, it is necessary to examine the geology, the history and the analysis of cartographical landscape representation. Because settlement patterns and landscape manipulation occurs within a cultural landscape based on the natural resources that are available, any study of landscape change requires a thorough description of the geology and geography in order to obtain a broad understanding of how these features affect and are affected by the cultural and environmental utilization of landscape elements. The explanation of the Southern Coastal Plain as described by Griffith, et al, was consulted and included.

Several books on the environmental history of McIntosh County, as well as, archeological accounts, diary entries, newspaper clippings, and historic photographs were consulted to gain a complete understanding of the cultural history of the people who inhabited this coastal landscape. An overview of cultural landscape appreciation and environmental change, interwoven with examples of Darien's environmental history, was undertaken to illustrate the importance of the evolution of landscape characteristics that will be conveyed through the maps, images and text on the website and mobile app.

In order to explain the interpretation of maps used for promotional purposes, it was necessary to include a brief history of mapmaking as a preface for the discussion on

the interpretation of both paper and digital maps by critical cartographers. A discussion of digital histories and the comparison of several digital history websites and mobile apps were launched in preparation for an explanation of the spatial history created for McIntosh County that accompanies this thesis.

Georgia tourism statistics and information on cultural heritage travelers was utilized to provide an explanation of the relationship between culture, travel and the Georgia coastal economy and to give reference for the intention of utilizing spatial histories for the purpose of enhancing tourism in McIntosh County.

CHAPTER 3

STUDY AREA

History of the Region

Patrick Geddes, the early twentieth century Scottish town planner, believed that we needed to place our cities in the context of their regions - environmental, social and economic – and understand them in that context (Mercer 1997). McIntosh County falls within the jurisdiction of the Georgia Coastal Regional Commission, the planning and development agency serving Georgia's six coastal and four adjacent inland counties**.** The commission's economic development strategy states the goal of leveraging "Coastal Georgia's success as a destination for tourism as a template for regional growth" and to "promote heritage tourism by enhancing access to natural, historic, and cultural core areas for recreation, public education, and tourist attractions…"[1]

Darien, the county seat of McIntosh County, is a small coastal city halfway between Savannah, Georgia's, famous historic districts and international port and Jacksonville, Florida, the home of two naval bases and many financial institutions. Darien sits just to the northwest of the popular Golden Isles (Brunswick, Jekyll Island, St. Simons Island, Sea Island and Little St. Simons Island) which boast their enjoyable beaches and posh resorts.

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[1] https://www.dca.ga.gov/development/PlanningQualityGrowth/Regional%20Plans/DraftRegionalPlans/CRC.DraftRAg.Jan2017.pdf

McIntosh County is connected to the rest of the East Coast via Interstate 95. Its ocean beaches, on Sapelo Island, are a ferry ride away from the mainland. An extensive coastal marsh system provides beauty to many homeowners who have residences along the county's waterways. The county's land area consists of 424.3 square miles.

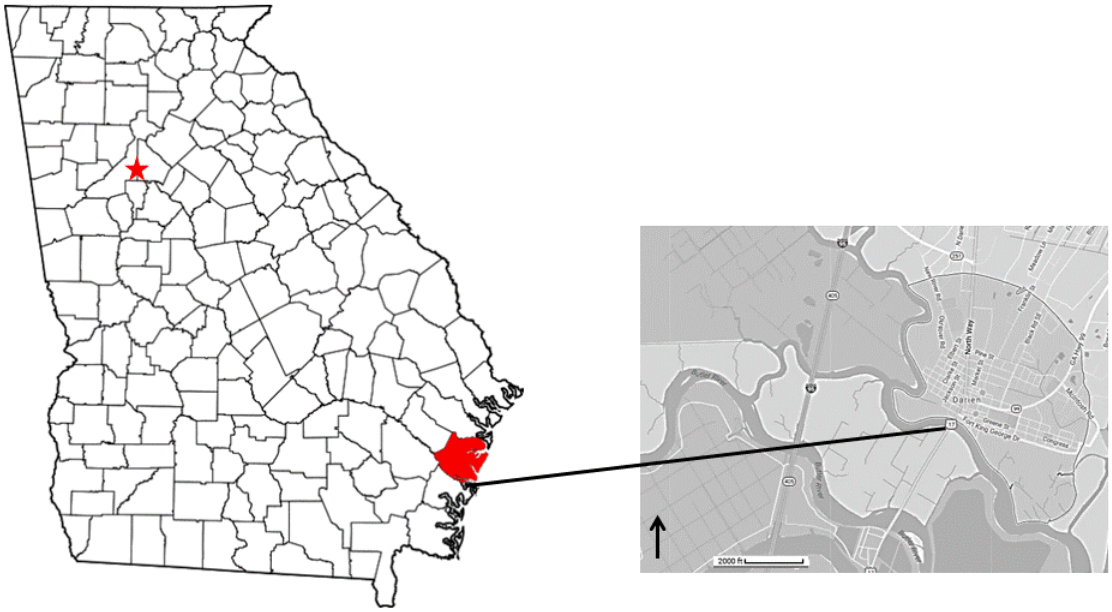


Fig. 2 Map of McIntosh County within the state of Georgia
Image by author

In the center of the hundred-mile-long Georgia coast, McIntosh County, falls within several cultural corridors lining the coast, the Gullah Geechee Heritage Trail, the Coastal Georgia Birding Trail, and the in-progress Coastal Georgia Greenway and the county can serve as the Gateway to the Golden Isles for those arriving from the north.

Fig. 3 Gullah Geechee Cultural Heritage Corridor Map
Gullah Geechee Cultural Heritage Corridor Management Plan

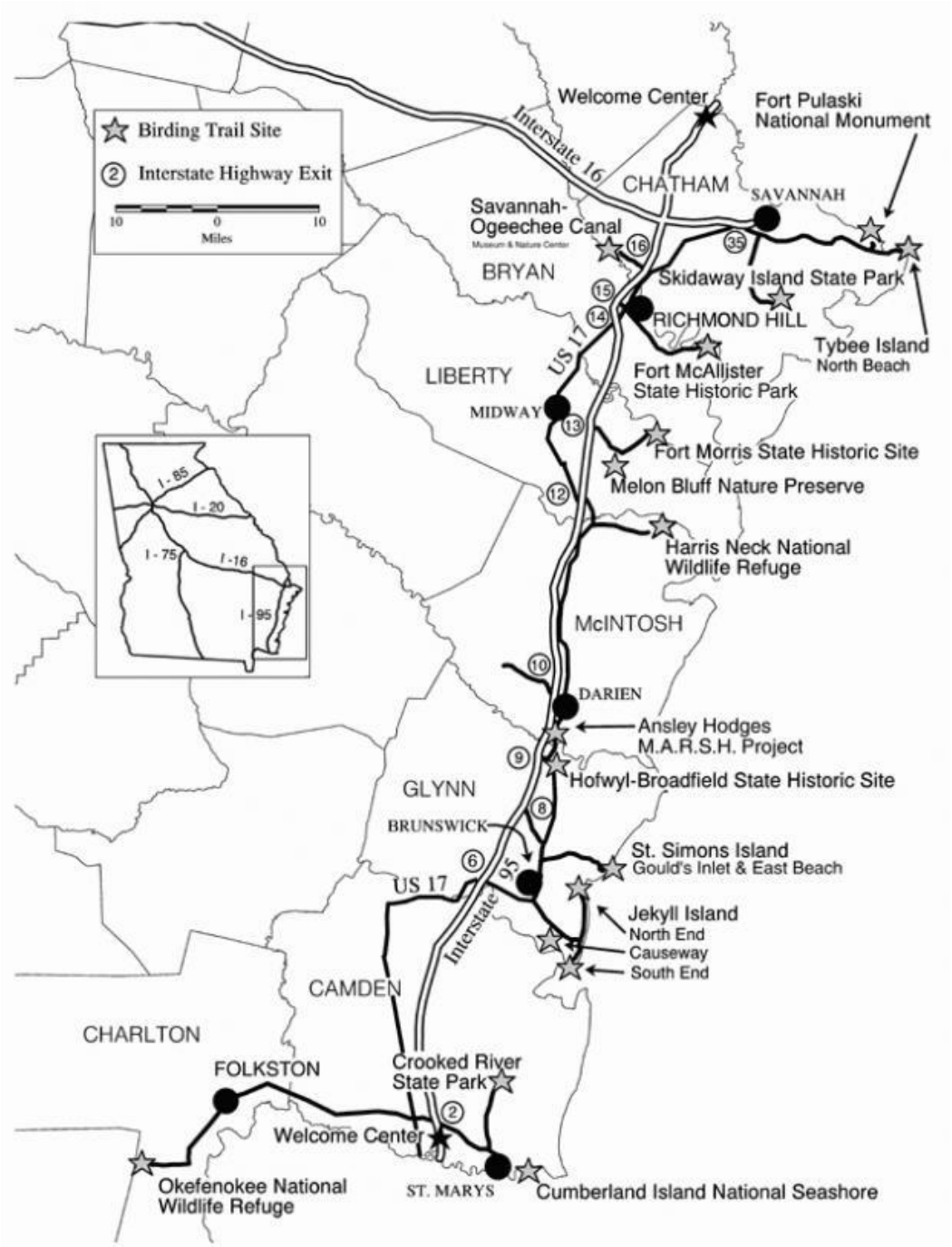


Fig.4 Colonial Coastal Birding Trail
http://www.georgiawildlife.com/sites/default/files/uploads/wildlife/nongame/images/CoastalBirdingTrailMap.jpg

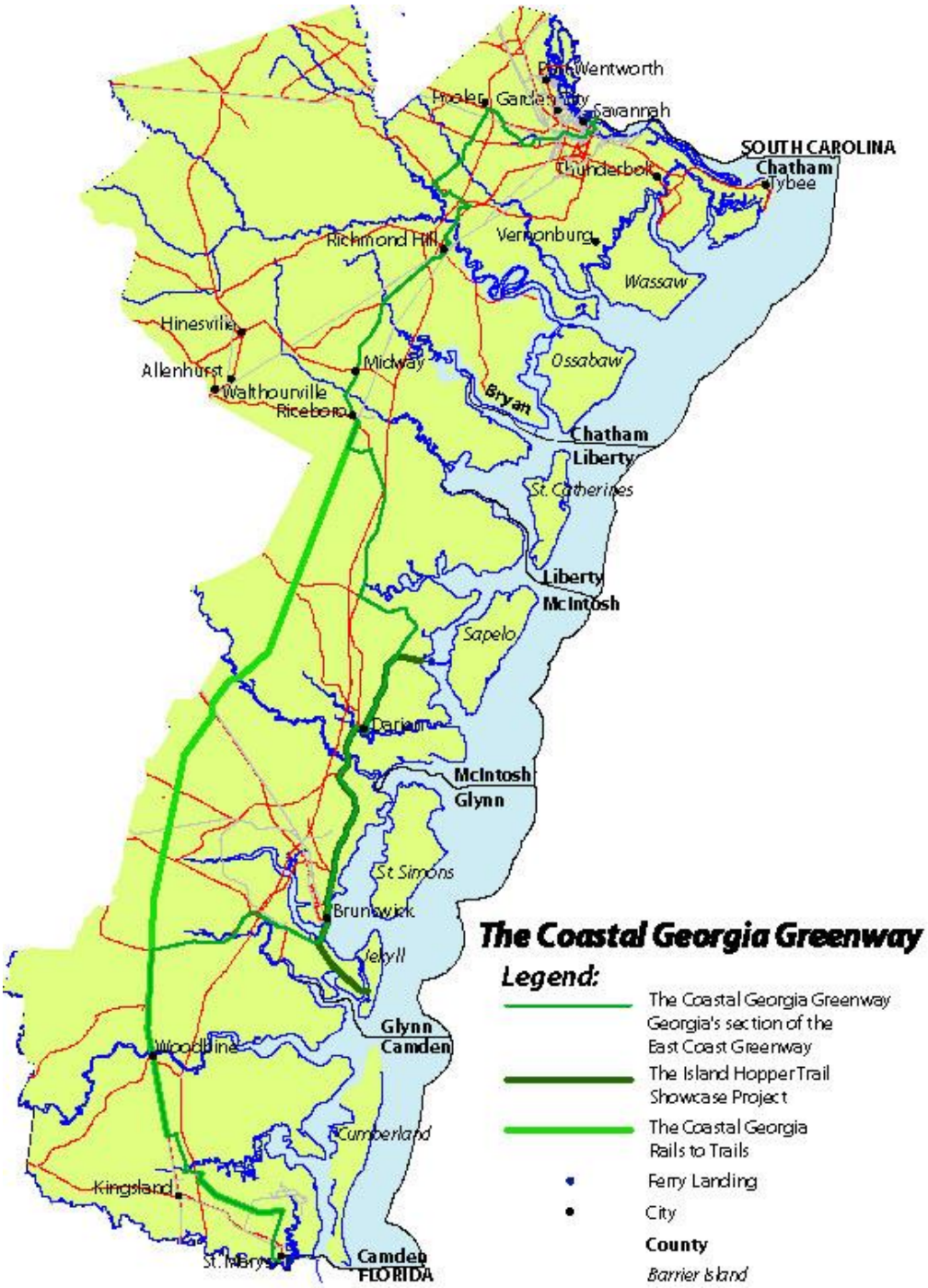


Fig. 5 Coastal Georgia Greenway
http://coastalgeorgiagreenway.org/wp-content/uploads/2011/03/CoastalGeorgiaGreenwayPlan.jpg

Darien, Georgia is the second oldest city in Georgia, one of the original thirteen colonies of the United States. It has reminders of its unique history in its reconstructed Fort King George, in the tabby ruins that lay on its waterfront, and in the legibility of its original Oglethorpe plan, along with many other historic structures and landforms including their historical markers that locate them within the landscape of the county. The original landscape served as a seasonal hunting and seafood gathering location for native people for thousands of years. Evidence of their existence rests in the remnants of their mound building, discarded seafood shells or middens, and pottery sherds found by archeologists. (Perrine 2012; Honerkamp 2008; Thompson 2010; Turck 2010).

There were three main events in the history of coastal Georgia that had major effects on the landscape. The first was the initial settling of the new colony. Georgia was settled for three reasons: as a place for England's worthy poor to reestablish themselves as hard-working, loyal citizens; for the harvesting of natural resources such as timber and the cultivation of raw materials such as indigo and silk for export to England; and as a defense against the Spanish to the South and the French who held land to the west. King George II, declared, in his 1732 "Charter and Ordanances [sic] of His Majesty's Colony of Georgia, in America," that,

> "many of our poor subjects are…not able to provide a maintenance for themselves and families; and if they had means to defray their charges of passage…they would be glad to settle in any of our provinces in America where by cultivating the lands, at present waste and desolate, they might not only gain a comfortable existence for themselves and families, but also strengthen our colonies, and increase the trade, navigation, of these our realms."[2]

[2] Trustees, Colony of Georgia, RG 49-2-18, Georgia Archives

The intention for settling the Georgia colony was predicted to benefit both England's trade and her "poor subjects" who would be given a new chance in this new land. From 1733 to 1750 the colonists of Georgia struggled to use their muscle to compete economically with the colony of South Carolina which utilized slavery to manipulate the landscape for their sustenance and for the economy of England (Stewart 1988).

However, when the ban of slavery, imposed by the altruistic intentions of the Georgia Trustees (the funders of the colonial venture) was lifted, the landscape took the shape of cultivated marsh and swamp land for rice production, as South Carolina planters migrated to this less developed land to the south (Stewart 1988). This productive agricultural phase in the colony of Georgia that relied heavily on free slave labor for its success lasted until the Civil War ended slavery, causing rice cultivation to slowly decline.

The landscape changed again when timber mills sprouted on the waterfront to process the timber that was rafted down the Altamaha for shipment to the northern states and to European cities. For four decades, timber mills boomed until the forests were cut down and Darien's bustling port turned to seafood harvesting and processing for its economic sustenance.

Natural Environment

Darien sits on the Altamaha River which delineates McIntosh County's southern boundary. The Altamaha River, the largest river on Georgia's coast and the second largest river basin in the eastern United States, is formed by the confluence of the

Ocmulgee and Oconee Rivers and drains nearly one quarter of the state. It flows past Darien into the Atlantic Ocean via a maze of tributaries, while carrying millions of gallons of fresh water, nutrients, and sediments to the estuary and coastal area every day. Thanks to efforts of the Georgia Conservancy, the river and its floodplain swamps and marshes are among the most undisturbed habitats in the state.

The integrity of the river's ecosystem can be credited in part to the absence of dams. The Altamaha's estuary on the southern border of McIntosh County, where the freshwater from the river mixes with saltwater from the Atlantic, occupies an area of roughly twenty-six square miles in both Glynn and McIntosh counties and is the largest intact, relatively un-degraded estuary system on the Atlantic coast (Frangiamore, 2016).

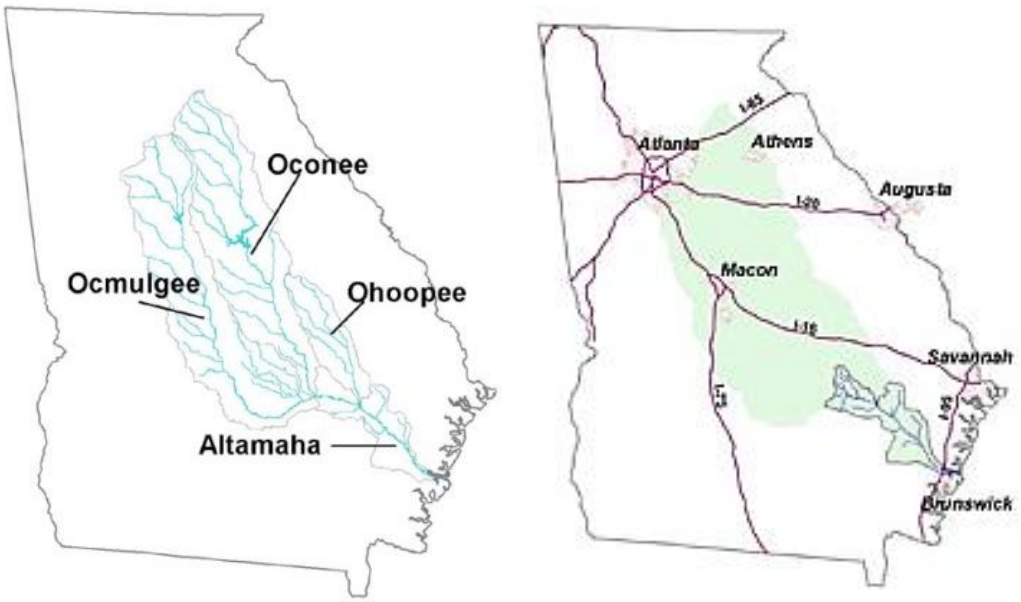


Fig. 6 Altamaha River Watershed[3]
Maps created by Dr. Alice Chalmers.

[3] Summit to the Sea 2002 webpage, http://coastgis.marsci.uga.edu/summit/altamaha.htm

The Lower Altamaha River Corridor, which has been identified as a high priority area in Georgia's State Wildlife Action Plan, is protected contiguously by conservation easements or state and federal ownership for over 50 miles along the 137-mile river, from the Inter-Coastal Waterway near Wolf and Egg Island National Wildlife Refuges (two of the first islands to be protected in 1969) up to the Griffin Ridge Wildlife Management Area.

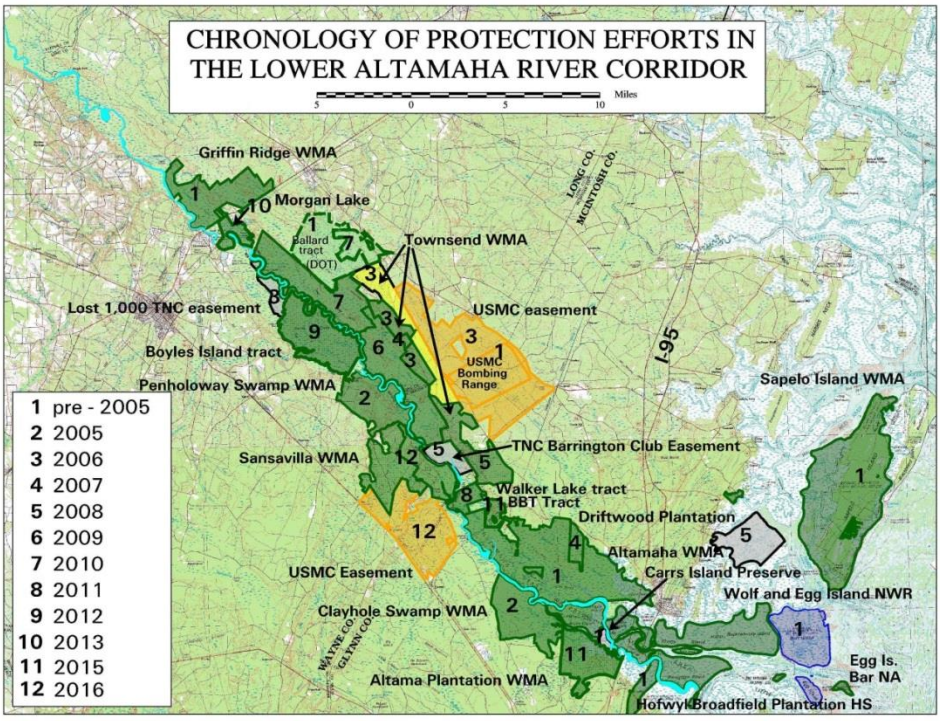


Fig. 7 Chronology of Protection Efforts, Lower Altamaha River Corridor Map by Chris Canalos, Georgia Department of Natural Resources.

The easements and federal and state land ownership along the river protects the habitat of at-risk wildlife species that depend on the undisturbed quality of the Altamaha River corridor. The Conservancy's commitment to preserving habitat along the Altamaha and in the coastal marsh and barrier island system has become a testing ground for a new conservation strategy of protecting entire landscapes and ecosystems.

The Altamaha River Delta alone is visited each year by more than 55,000 shorebirds. The river and its surrounding forests and marshlands are not merely protected for the benefit of its flora and fauna, but for the excellent recreational opportunities it offers kayakers, anglers, hunters and naturalists.

In October 2016, an administrative judge ruled in favor of a lawsuit filed by, The Altamaha Riverkeeper, the Southern Environmental Law Center, and Atlanta-based GreenLaw in challenging an Environmental Protection Agency permit that allows the Rayonier Advanced Materials mill in Jessup, not far from Darien, to dump millions of gallons of treated wood pulp daily into the river. The permit was sent back to Georgia's Environmental Protection Division so that a new permit would have to be issued that reduced the discharge limits. Citizens and wildlife will benefit from the restriction on the foul-smelling effluent from being emitted into the river (Crawford 2016).

Richard T. T. Forman describes an ecoregion as "a large unit of land and water typically characterized and delineated by climate, geology, topography, and associations of plants and animals" each depending on one another for survival (Forman 2008). The state of Georgia is comprised of six ecoregions. In 2001, Griffith, et al, depicted Georgia's Level III and IV Ecoregions (fig. 8), from the highest elevations in the Cumberland Plateau, Ridge and Valley and Blue Ridge regions, to the rolling hills of the Piedmont where the Fall Line transitions Georgia's topography to the flatter Southern Coastal Plain, at the lowest elevation. This is the area this thesis will address.

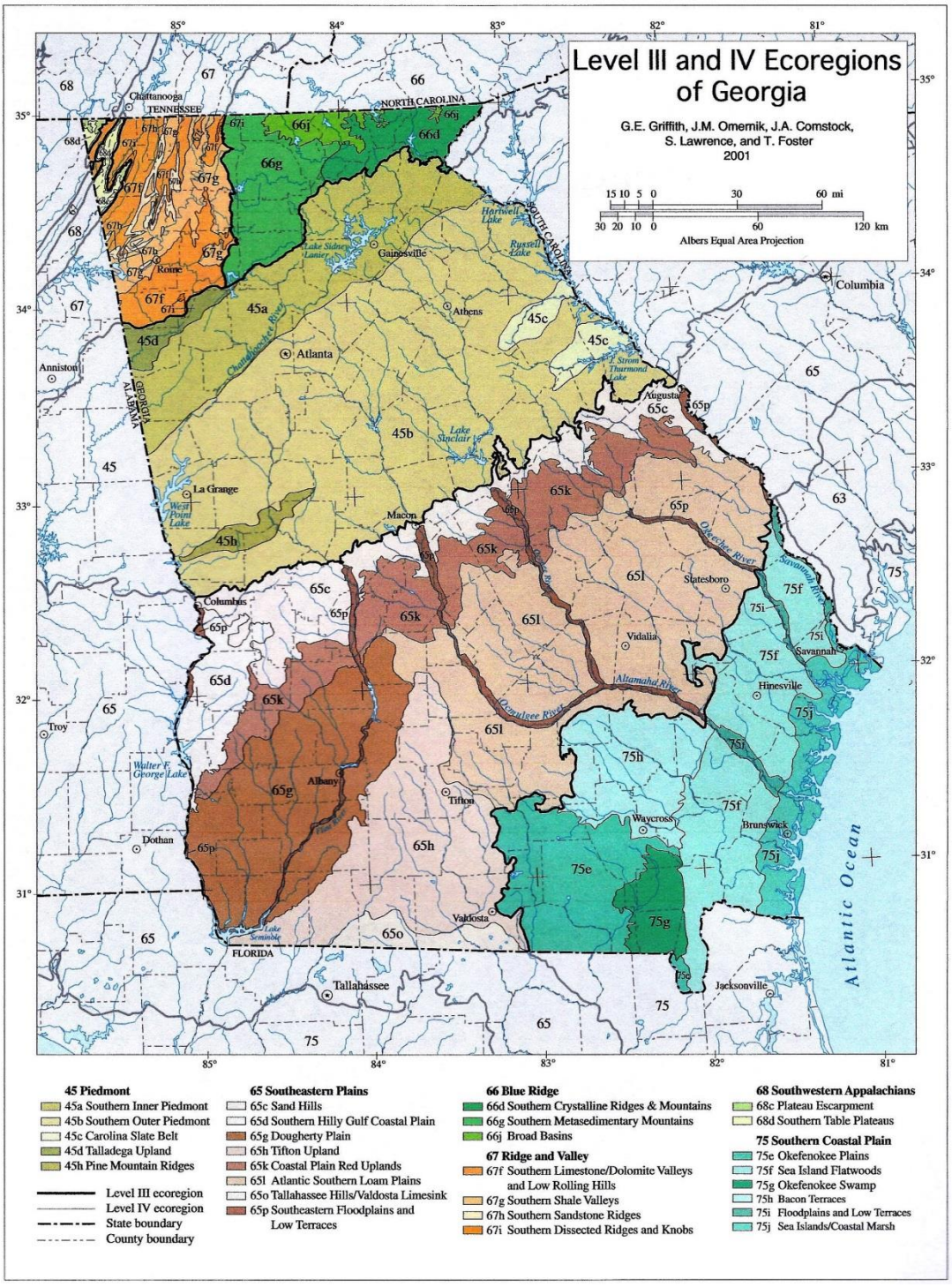
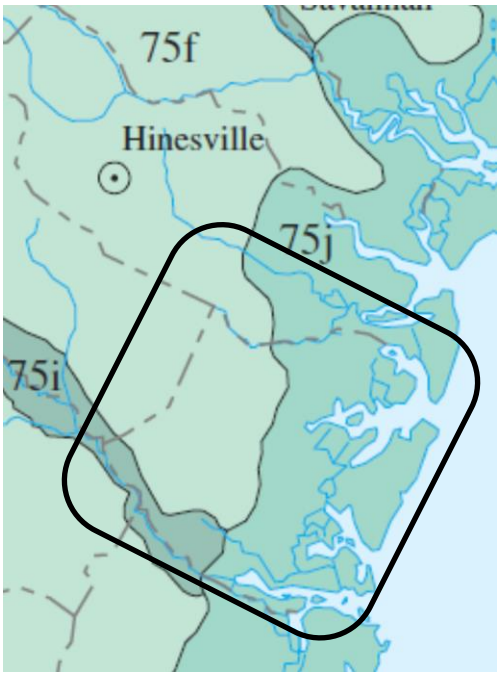


Fig. 8 Georgia's Level III and IV Ecoregions
Map courtesy of Dr. Glenn Griffith and Dr. Jim Omernik

The Southern Coastal Plain spans from the sandy beaches where the barrier islands meet the Atlantic Ocean to the portion of the mainland that remains within the zone of tidal influence (Edwards, et.al.). Because of the constant fluctuations in tides, salinity, moisture and wind, this is the most dynamic of Georgia's ecoregions. Three of the Southern Coastal Plain sub-regions exist within McIntosh County's borders and are detailed in the diagram below.



75f. The **Sea Island Flatwoods:** Loblolly and slash pine plantations cover much of the region. Water oak, willow oak, sweetgum, blackgum and cypress occur in wet areas.

75i. **Floodplains and Low Terraces**: River swamp forests of bald cypress and water tupelo and oak-dominated bottomland hardwood forests provide important wildlife habitat.

75j. **Sea Islands/Coastal Marsh**: The coastal marshes, tidal creeks, and estuaries are important nursery areas for fish, crabs, shrimp, and other marine species. Parts of the region have a long history of human alterations. (Griffith, et al 2001)

Fig. 9 Section of Level III & IV Ecoregion, Griffith and Omernik
(McIntosh County is delineated by the black parallelogram)

- Native Americans cultivated corn, melons, squash, and beans
- A Spanish mission period during the 1500-1600's included crops of citrus, figs, peaches, olives, artichokes, and onions
- A plantation agriculture economy in the late 1700's through the 1800's produced indigo, rice, sugar cane, and sea island cotton (Griffith, et al 2001)

There are eight clusters of thirteen barrier islands off the coast of Georgia. Five of them, Tybee, Skidaway, Sea Island, St. Simons and Jekyll, are accessible by car and heavily developed. During the early part of the twentieth century, many of the barrier islands were purchased by wealthy Northern industrialists as winter retreats.

Georgia's 110-mile coastline is fragmented by five major river systems, Savannah, Ogeechee, Altamaha, Satilla and St. Marys all of which originate in the Piedmont region of Georgia and carry sediment from the Piedmont through the coastal plain depositing it landward of the barrier islands to form the extensive coastal marsh system. As the most prevalent land cover in the region, the coastal marsh, covers 35 percent of the region's area, forming approximately one third of all the salt marsh on the East Coast (Edwards et al. 2013). The marshes were originally troughs between the islands and mainland that became flooded lagoons created after sea levels receded.

Because they were protected from wind and wave action by the barrier islands, clay and other suspended particles carried seaward by the rivers were eventually deposited in the troughs to form the salt marshes. The salt marsh consists mostly of tall grass, Spartina Augustifolia, and provides an extremely important habitat and breeding ground for fish and shellfish used by inhabitants throughout history for sustenance. Freshwater marshes are extensive at the mouth of the Altamaha River and also extend up river being eventually replaced by cypress-gum or hardwood swamps. Much of the area now covered by freshwater marsh was cypress swamp before it was cleared and diked for rice cultivation (National Park Service 2005).

McIntosh County sits at the most western point of the Georgia Bight. A bight is a large, shallow bend or curve in any geographical feature, usually a coast, and defined by

mariners as a bay that could be sailed out of on a single tack, in a square-rigged sailing vessel, regardless of the direction of the wind (typically meaning the apex of the bight is less than 25 degrees from the edges) (Hayes 1994).

Because of this concave coastal configuration, tidal water to the north and south funnels in to the center of the bight, piling on top of itself to create a large six-to-nine-foot high daily tide whereas, tides in adjacent Florida and South Carolina are only three feet high. Twice a day incoming tides flood the marsh with nutrients and twice a day they carry wastes away. Tidal influence can be detected as much as forty miles up some of Georgia's coastal rivers creating unique ecosystems. The tides were used by rice planters to irrigate their fields as fresh water, riding on top of salt water, could be directed through tidal-operated flood gates as tides came in. The tides were also used to power sawmills and rice mills.

Demographics

In the forty years between 1970 and 2010, coastal counties in the United States added approximately 446 people per square mile so that by 2010, thirty-nine percent of the United States population resided in coastal counties. In addition, there is an eight percent projected increase in population for coastal counties by the year 2020. Georgia, however, ranks only 28th out of the 31 coastal states in population density.[4] The Coastal Regional Commission's website states that, "the population of coastal Georgia is the fastest growing of any region in the state, outside of Metropolitan Atlanta. In 2010, the region's population was 654,386, which marks about a six percent increase since 2006."[5]

[4] NOAA"s State of the Coast, Coastal Population Report, March 2013
[5] http://www.crc.ga.gov/departments/economic/aboutcg.html

The 2000 United States Census listed McIntosh County as having a population of 10,847 with 11.8 percent being over the age of sixty-five.[6] By 2010 the population jumped 32 percent to 14,332 with 17.3 percent of the population is over the age of sixty-five. The warm climate, inexpensive real estate and beautiful scenery are attractive to many retirees who build homes along the coastal marsh. In 2015, the median household income was $42,988 ($49,620 in Georgia) and there was a 24 percent poverty rate in the county. The poverty rate for the state of Georgia was 17 percent.[7]

Over the years, several studies have been undertaken to assess Darien's physical and financial assets. In 1978, two studies were performed, one, a scenic and recreational river proposal for the "great Altamaha Swamp" and another, an environmental tourism program called Darienport, for Darien's waterfront area. In 2009, the Darien Waterfront Park and Multi-Use Masterplan was completed. A year later, McIntosh received a $172,500 grant to "plan the stabilization, rehabilitation and adaptive re-use" of the former Huston dairy barn on Butler's Island. More recently, the county completed the McIntosh County Tourism Resource Team Report, Phase I of the McIntosh County Historic Resource Survey, and an illuminating study undertaken by New South Associates and the Georgia Department of Transportation regarding the archaeological significance of the land surrounding the Interstate 95 interchange in preparation for renovations to the bridge overpass. The city and county are committed to understanding the importance of their ecological and cultural features.

[6] https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk
[7] https://www.census.gov/quickfacts/table/PST045216/13191

CHAPTER 4

APPRECIATION OF THE COASTAL LANDSCAPE

Environmental History

The term 'landscape' "has come to signify the recognition of the active role played by humans in shaping nature…" (Lozny 2006). Most land in North America before European colonists arrived was extensively, although not intensively, manipulated by Native Americans as our myths have countered. Disease from early European encounters reduced much of the American Indian population between the time of original European exploration in the fifteenth century and the seventeenth century when English colonists arrived, thus the landscape reverted to a more seemingly wilderness appearance (Denevan 1992).

There are many disciplines that overlap in the study of the landscape: environmental history, cultural geography[8], and historical ecology[9], to name three. Roderick F. Nash first used the term 'environmental history' in the spring of 1970 to teach his first class on the history of man's mutual relationship with the landscape and its resources. Environmental history examines the scientific understanding of our landscape in light of the political, religious, social and economic inputs and impacts on the configuration and conditions of the landscape (Nash 1972). Environmental History

[8] The study of spatial variations among cultural groups and the spatial functioning of society.

[9] In the 1990's, Carole Crumley pioneered the historical ecology movement which in studying landscape at the regional level uncovers the interaction of the various human land use choices and natural variability of the land through time. The interdisciplinary approach encompasses anthropology, biology, geography, demography, and economics (Lozny 2006).

exposes the “evidence of man's values, ideals, ambitions, and fears,” revealing a society's culture and traditions and how they impacted the landscape (Nash 1972). Environmental history has three key elements (Whyte 2013):

- the understanding of “the structure, distribution and characteristics of the natural environments in the past”
- “the study of how human activity has interacted with the environment” through disciplines such as landscape history, archaeology, geography, etc.
- “the study of perceptions of past environments and how these have influenced the management and exploitation of environments.”

The first element encompasses the discovery of the changing distribution of plants and animals, landforms and climate (Stewart 1998). For example, the enormous canebreaks in the Southeastern United States shrank and expanded in relationship to human uses. Native Americans extensively used the cane for a variety of purposes, but in the eighteenth and early nineteenth century canebreaks flourished as Native American populations decreased due to colonial expansion, including disease brought to the new world by Europeans. The canebreaks were used by colonists as forage for their cattle. Runaway slaves used them as hiding places, however, the overgrazing by cattle and the systematic clearing to make way for cotton eradicated the vast stretches of canebrakes in the southeastern United States (Stewart 2007).

The second element focuses on the various ways economic, social, political and ecological relationships are woven together in the transformation of the landscape. It connects historical ecology with changes in human culture (Stewart 1998). Once slavery was permitted in the colony of Georgia, “planters and slaves developed this vast coastal

plain, clearing forests and swamps of their trees to produce one of the most prosperous and repressive plantation economies in the Western Hemisphere" (Edelson 2007). Owning land could not only secure a family's subsistence, but allow for the production of crops for economic gain in local and transatlantic markets (Edelson 2007).

The third element comprises the intangible or ideological cultural entanglements with nature such as myths, iconography or, for example, studies of man's contemporary encounters with nature in theme parks or popular nature television shows (Stewart 1998).

For environmental historians like Corner and Mathur, "The landscape writes us, as we write it…Both are in a constant state of becoming" (Weller 2015). The word palimpsest has nuanced meanings and has been used by the above environmental historians to refer to the landscape as something that has changed over time and shows evidence of the changes that have taken place. The historical use of palimpsest originally referred to "an old document on which the original writing has been erased and replaced with new writing."[10] The erasure, however, leaves underlying evidence of the original manuscript.

A palimpsest refers to something having numerous layers partially obscured by succeeding layers which is what our landscape becomes over time. For instance, Tell es-Sultan[11], is the ancient city of Jericho, one of the oldest settlements on earth where hunter-gatherers were attracted by a perennial spring. According to UNESCO, archaeological excavations carried out in the mid-twentieth century revealed twenty-three layers of habitation, dating back to approximately 9,000 BC. The landscape of coastal

[10] https://www.merriam-webster.com/dictionary/palimpsest

[11] *tell* in Hebrew and Arabic means "mound" or where consecutive layers of habitation built up a mound over time

Georgia tells a layered story of the pursuits of the American Indians, the Spanish missionaries, and the colonial English.

The Western European view of nature was that it was something to be feared and then dominated (Whyte 2013). By dominating it, humans who are created in God's image, could transform the profane into the sacred. The American Indian view of nature was different. Hunting groups, for instance, "went through ritual preparations before embarking on the hunt" (Merchant 2007). The sacred existed in all elements of nature and tribes lived in a more sustainable fashion than Western Europeans.

The Guale and Timucua tribes who hunted, gathered, and minimally cultivated the maritime ecoregion during the Spanish Mission period, used a great variety of plants and animals to fashion into the elements of survival of housing, clothing, weapons and tools, ritual objects and food and drink. "They did not isolate discrete commodities in nature [for the] accumulation of material wealth" as did the Europeans (Stewart 1988). The Spanish established frontier outposts on coastal Georgia beginning in 1680 to impede English colonization, provide protection and temporary respite for their own ships (which traveled up the North American coast from South America to take advantage of trade winds and the Gulf Stream) and to convert the Indians to Christianity, thereby assimilating them or at least making them allies (Stewart 1988). They did not seek to utilize the landscape for extensive cultivation or raw material procurement as did England.

The reasons for English settlement of the colony of Georgia, were partly altruistic, partly for defense, and partly economic (Stewart 1988). Many of the prisoners in the London jails that were incarcerated for their debts were not hardened criminals and

deserved a second chance of land ownership in the new world. The altruistic reasons the Georgia Trustees had for allowing their freedom in exchange for producing goods to ship to England was a wise idea, except that the physical condition and skills of these individuals may not have always matched the needs of a wilderness colony for healthy, sturdy and skilled farmers to begin the arduous task of clearing and preparing fields for farming on undeveloped land. As slavery was initially banned in the Georgia experiment, so as to insure the industry of the beneficiaries of the Trustees' donation of land and initial upkeep, it was up to these new yeoman farmers to survive by their own physical efforts.

In the case of Darien, the settlers were specifically chosen for their skills as rugged warriors and the ability to survive in harsh conditions. It was Oglethorpe's brilliance in recruiting the rugged Scottish Highlanders that proved to be an excellent choice. The Scotts were hearty enough to survive frontier conditions and prosper in, as well as defend, their new homeland. They succeeded in this charge in the Battle of Bloody Marsh which compelled the Spanish to retreat permanently to La Florida (Sullivan 2016).

The high bluff upon which Fort Darien was built by these Scottish warriors was chosen for its safety from rising flood water and still affords this same protection for today's Darienites. When their second agricultural crop failed, the Scots returned to the skills they used in their forested homeland in the Highlands of Scotland. They began felling and selling the timber from the abundant trees dotting the landscape and raising cattle that were driven down from South Carolina for them, trading these commodities for the necessities they weren't able to produce themselves. The combination of the skills

they brought to the new world from their native land and the availability of resources in coastal Georgia proved to be an excellent combination (Sullivan 2016; Stewart 2002).

Once the period of Trusteeship ended and slavery was permitted in the Georgia Colony, Darien's coastal swamps and marshes were trenched and diked like those of South Carolina for rice cultivation. Although there are differing accounts of how rice came to be grown in the swamps and marshes of the southern coastal states, one account indicates, "The first recorded effort at rice cultivation was conducted by Dr. Henry Woodward of Charleston, S.C., in 1685. Dr. Woodward obtained the rice seed from Captain John Thurber, who had sailed his ship to Charleston from the island of Madagascar" (Smith and Dilday 2002).

Statistics show that once rice plantations began to be established, slaves from the rice-growing areas of Africa returned a higher price to the slave traders than those from other parts of Africa. Advertisements for slaves from the "Windward and Rice Coast" indicated their value for their knowledge of rice cultivation (Carney 2001). Rice cultivation forever changed the landscape of the Georgia coast as cedar trees were cut from their swamps along the rivers and the ditches and dikes necessary for tidal rice production were configured and remain evident in the former rice fields today, often as converted wildlife sanctuaries.

Today, the Nature Conservancy's Cathead Creek Preserve, bordered by Cathead Creek on the north, near Darien, protects 752 acres of riverine bottomlands. Through their conservation efforts, former rice fields are reverting to original bald cypress-tupelo swamp.

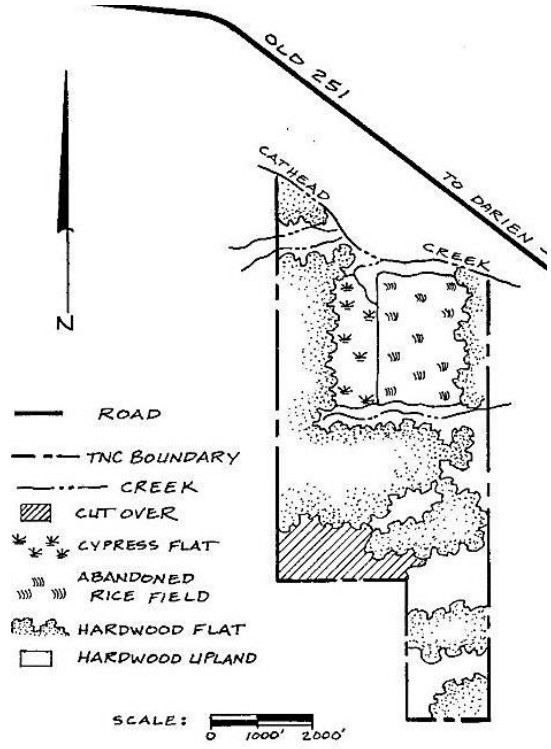


Fig. 10 Cathead Creek Preserve
Image courtesy of the Nature Conservancy

When it was realized that the old growth southern yellow pine was strong enough to be used for items such as caissons used to build the towers of the Brooklyn Bridge, Darien's prime location on the Altamaha River, with its connection to upland pine forests, helped make the city a global timber port, shipping 112.6 million board-feet of timber to cities in the north, to South America and to Europe at its peak in the year 1900 (Sullivan 2016). Saw mills and large wooden docks built along the waterfront, allowed timber and naval stores to be exported from several locations in Darien.

Maps created by the Sanborn Map Company[12] were designed to assist fire insurance agents in determining the degree of hazard associated with a particular property

[12] The maps also indicate widths and names of streets, property boundaries, building use, and house and block numbers."-- Walter W. Ristow**,** Fire Insurance Maps: in the Library of Congress.

based on its size, the material with which it was constructed, and the location and proximity of water pumps. Luckily, for historians, these records documented the changing face of towns and cities throughout the United States, providing detailed information for each neighborhood and block. In the 1885 Sanborn map, the San Savilla Union Saw Mill sits on Darien's waterfront on the current site of Skipper's Fish Camp restaurant. In the 1908 map, the log pond, used to corral logs ready for processing, is still there, but the mill no longer exists, as the Georgia coastal plain timber had been nearly decimated by that time and several hurricanes in the late 1890's destroyed many buildings in McIntosh County.

The maps below show the palimpsest of change that took place in the landscape due to environmental and economic conditions. In the large map, the 1885 Sanborn map is geo-rectified over a Google Earth image to show the placement of the Skipper's Fish Camp restaurant on the original site of the San Savilla Union Sawmill. The condominiums peer out in the front and continue over the log pond.

Fig 11 Geo-Rectified Sanborn Map

Sanborn Map Company. Darien, GA. University of Georgia Libraries Map Collection, Athens, GA, presented in the Digital Library of Georgia

Google Earth 2014. (December 29, 2016). *Darien, GA.* 312207.41N, 812611.92W, eye alt 984 ft.

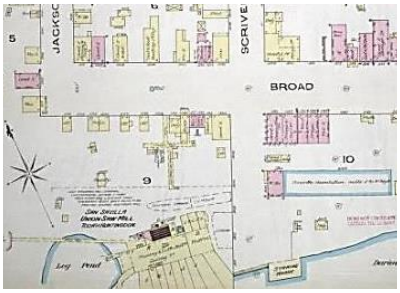


Fig. 12 1885 Sanborn Map, Darien, GA

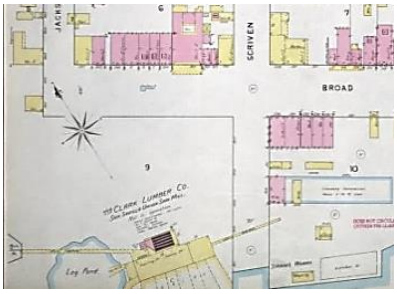


Fig. 13 1895 Sanborn Map, Darien, GA

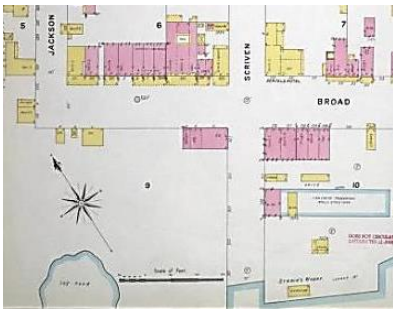


Fig. 14 1908 Sanborn Map,[13] Darien, GA

The tabby ruins indicated by the blue horizontal rectangle in the Sanborn Maps, and pictured below in the photograph, are from an earlier time. Before they were burned during the Civil War, the ruins of these tabby warehouses stored cotton that was floated down the Altamaha River from Georgia's interior. The cotton was shipped from Darien's docks along with coastal Sea Island cotton to northern states and to England for processing. Although never rebuilt, the warehouse ruins still remain as a tribute to the economics of the bygone era. Their preservation and interpretation would serve Darien

[13] Sanborn Map Company. Darien, GA. University of Georgia Libraries Map Collection, Athens, GA, presented in the Digital Library of Georgia

well as some of the few remaining tabby structures that survive on coastal Georgia, many of which are attributed to the technique devised by one of McIntosh County's prominent citizens, Thomas Spalding.

Fig. 15 Tabby ruins, Darien waterfront
Image by author

It took only one generation for the southern forests to be cut of the majority of their timber, and McIntosh County's citizens had to look elsewhere for their livelihoods. They looked to the waters off their shores for harvesting and producing seafood, especially oysters, shrimp, and now jelly fish. Although the supply of oysters was rapidly depleted by the 1930's when the last of the canneries closed, the University of Georgia Marine Extension and Georgia Sea Grant are spawning baby oysters in their hatchery with hopes of reviving commercial oyster production and harvesting. The potential harvest value for the Georgia coast will be between $140,000 and $245,000.[14]

[14] University of Georgia Extension. October 2016. BusinessinSavannah.com

By 1960 McIntosh had one of the largest shrimp-boat fleets on the south Atlantic coast. Beginning in 1975, however, the profitability of this industry too, began to decline, brought about by rising operating costs and the increasing importation of cheaper foreign shrimp. Today, however, Darien maintains its shrimping fleet and has reconfigured part of its waterfront for recreational purposes with a stage, free municipal docks and a restaurant with a lovely river view. A grant has been applied for by the Downtown Development Authority to assist the Chamber of Commerce and the jellyball factory, Golden Island International, with giving public tours of its jellyfish harvesting and production facility located on Fort King George Drive at the river (cannonball jellyfish are a delicacy in Asia and are plentiful off Georgia's shores. By studying Darien's environmental history through maps, we can understand how her landscape reveals the palimpsest of her successes and slumps. In order to further understand our landscapes, we can look to the appreciation of cultural landscapes.

Cultural Landscapes

Cultural landscapes are "special places that reveal aspects of our country's origins and development through their form and features and the ways they were used" (Birnbaum, 1994). According to the National Park System's, Preservation Brief No. 36, *Protecting Cultural Landscapes*, there are four types of cultural landscapes:

1. historic sites are associated with a historic event, activity, or person
2. historic designed landscapes were consciously planned by an amateur or professional according to design principles in a recognized style or tradition
3. historic vernacular landscapes evolved through use by the people whose activities or occupancy shaped that landscape
4. ethnographic landscapes contain a variety of natural and cultural resources that associated people define as heritage resources

Cultural heritage is the legacy of physical artefacts and intangible attributes of a group or society that are inherited from past generations, maintained in the present and bestowed for the benefit of future generations.[15] Tangible heritage consists of buildings and historic sites, monuments, artifacts. Intangible heritage is oral traditions, performing arts, rituals and festivals, and traditional crafts, recipes or trades. Interpreting the combination of the two, creates a rich picture of an environment's history. Currently McIntosh County's history is told through interpretive exhibits at the reconstructed pre-revolutionary Fort King George Historic Site[16], the Burning of Darien Museum, which recounts the blaze that leveled Darien during the Civil War, and the Old Jail Art Center that houses a museum of photographs and artifacts from the late 1800's through the mid-twentieth century.

The 'vernacular past…" explains Jackson, "is the chronicle of everyday existence." (Jackson 1980) The story of the common people and their participation in the American story by way of their contribution to local history is very relatable to the average tourist. Through the interpretation of the vernacular landscape, which has been shaped by individual citizens, we are helped to remember the past, not through major historic events requiring monuments and plazas, but in the small continuous acts that have become the framework of the landscape and provide it with its unique identity (Jackson 1980).

[15] United Nations Educational, Scientific and Cultural Organization http://www.unesco.org/new/en/cairo/culture/tangible-cultural-heritage/

[16] A state historic site run by the Georgia Department of Natural Resources providing interpretation from pre-colonial through early twentieth century.

The remains of shell middens[17] left by the Guale Indians who utilized the coastal lands are evidence of the way everyday citizens shaped their land.

Fig. 16 Shell Ring, Sapelo Island, McIntosh County. A trench was dug through this ring by archaeologists to reveal the refuse of daily living which preliminary research shows was accumulated over a long period of time. Image courtesy of archaeologist, Dr. Victor Thompson. http://www.georgiaencyclopedia.org/articles/history-archaeology/coastal-shell-rings.

According to J.B. Jackson, landscape appreciation comes from understanding the historical transformations that took place in the landscape over time. The vernacular landscape, he remarks, developed as original settlers took "measures to survive and

[17] shell middens are circular and semicircular deposits of shell, bone, soil, and artifacts. The largest are more than nine feet high and three hundred feet in diameter. Native Americans occupying the coastal zone of Georgia created these features during the latter part of the Late Archaic Period (4,200 to 3,000 years ago). Shell (mostly oyster) makes up a major part of the rings, as are the remains of many different plants and animals that native groups used for food and medicine--Victor Thompson, University of West Florida.

prosper with the resources at hand" (Jackson 1980). As settlers modify the landscape in order to provide for their defense, shelter, governance, worship, etc., they form boundaries, organize space and form emotional connections with the land. Jackson explains how to appreciate the landscape by being aware of these elements.

The boundaries of a landscape bind a group within it and exclude others. During our colonial times, forts were usually the first structures built for military purposes, as protection was needed against the French, Spanish or Indians. Georgia had forts all along its settled areas of the coast as we can see in Emanuel Bowen's 1748 version of a "New Map of Georgia with Part of Carolina, Florida and Louisiana." In fact, it has recently been discovered that the French built Fort Caroline near the mouth of the Altamaha River and not in Jacksonville, Florida as believed for 453 years.

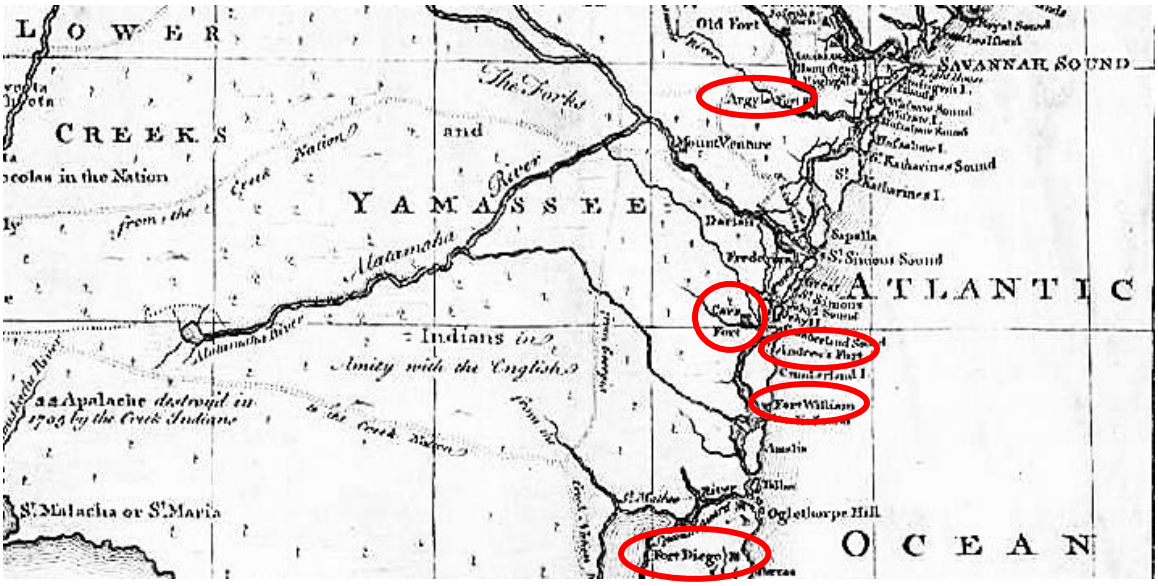


Fig.17 Section of a "New Map of Georgia"
Red ovals indicate some of the forts existing at that time.

A new map of Georgia, with part of Carolina, Florida and Louisiana. Drawn from original draughts, assisted by the most approved maps and charts. Collected by Emanuel: Bowen, geographer to his Majesty, hmap1748b6, Hargrett Rare Book and Manuscript Library, University of Georgia Libraries.

The first fort in McIntosh County was Fort King George, now reconstructed on its original site after its exact location was pinpointed by historian Bessie Lewis using old

maps uncovered from the South Carolina State Archives. Fort King George was built in 1721 on a low bluff along the Altamaha River. It was manned until 1735, but the men who lived there suffered many hardships due to pests and poor conditions after a fire damaged the structure. Today, Fort King George is a Georgia State Historic Site enjoyed by visitors from all over the world.

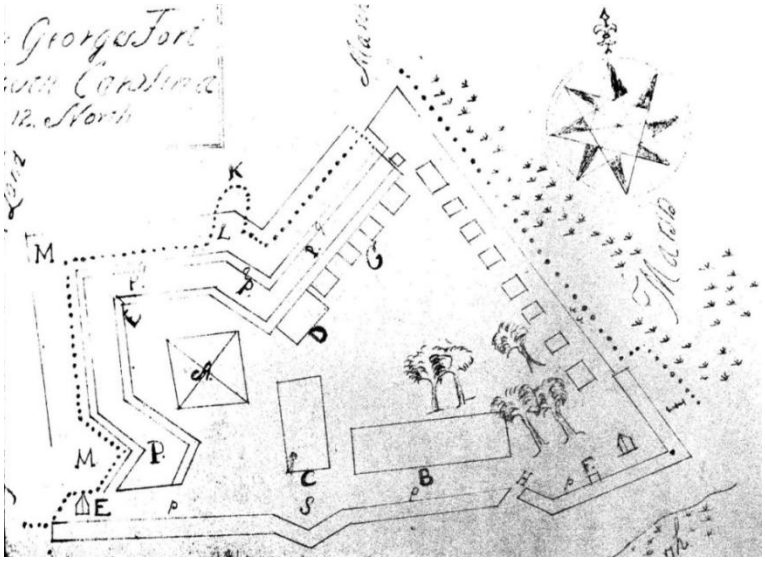


Fig.18 Plan of Fort King George
Plan of King George's Fort, Altamaha, South Carolina, John Barnwell, c1772
Photocopy held at Georgia Historical Society of original held at Public Record Office, London. Colonial Office, Georgia 2

Fig.19 Google Earth image, Ft. King George. Accessed April 14, 2017
https://www.google.com/maps/place/Darien,+GA+31305/@31.3637716,-81.4145571,102

In 1736, when the Scottish Highlanders were recruited to defend South Carolina against the Spanish, James Edward Oglethorpe selected the high bluff a mile west of Fort

King George upon which to build Fort Darien on the land where the city still sits. A higher bluff was less susceptible to flooding and might have protected the Highlanders from mosquito-borne diseases from which the soldiers at Fort King George suffered, as higher ground is farther away from pooling water where mosquitos breed and can also catch breezes for better air circulation thus better health.

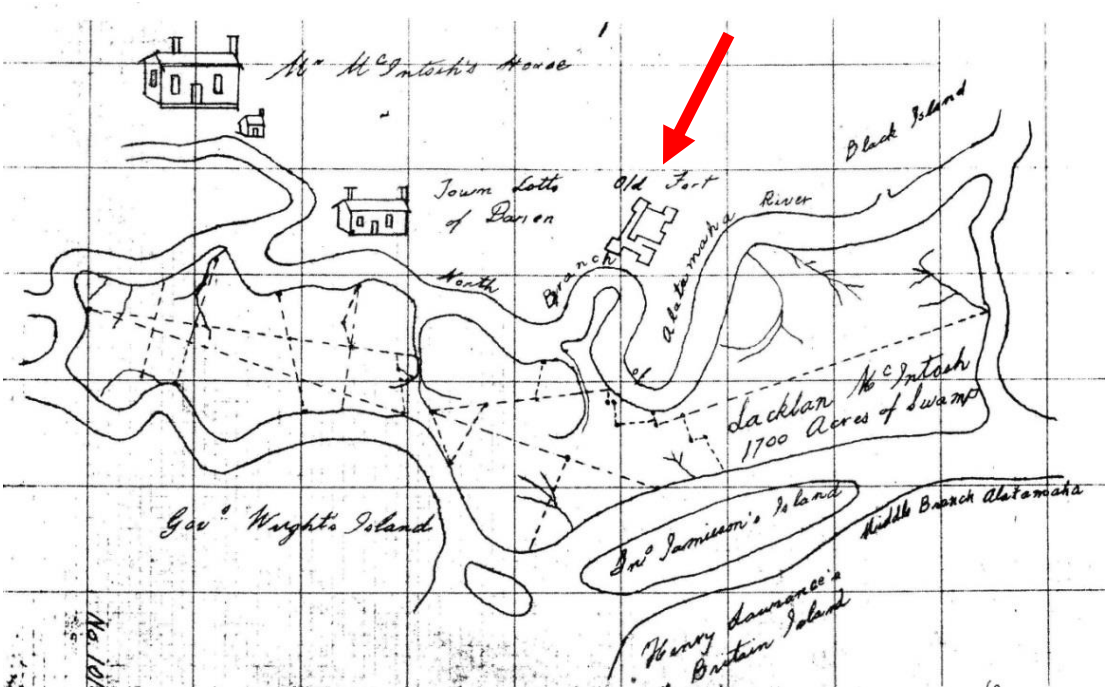


Fig. 20 McIntosh Tract.
Fort Darien is shown in this 1772 plat map, Philip Yong.
Copy held at Georgia Historical Society, MS1361-MP812.
Original held at Surveyor General Department, Atlanta, Georgia.

The boundary is a symbol of law and order and permanence, the network of which transforms a natural environment into a human landscape (Jackson 1980), as we can see in the above plat map delineating various property holdings surrounding Darien, including Lachlan McIntosh's tract, the son of Darien's founder, distinguished Revolutionary War commander and McIntosh County rice plantation owner.

The map drawn by New South Associates in their Cathead Creek Archeological study (below) traces the boundaries of the individual rice plantations that were farmed along Cat Head Creek (a tributary of the Altamaha River) before the Civil War. The properties were divided so that each planter could have a variety of resources, marsh, river and upland within his property's boundaries. The re-creation of these plat maps by archeologists and historians provide us with clues to the values, customs and ways of organizing space in colonial times on the coast of Georgia.

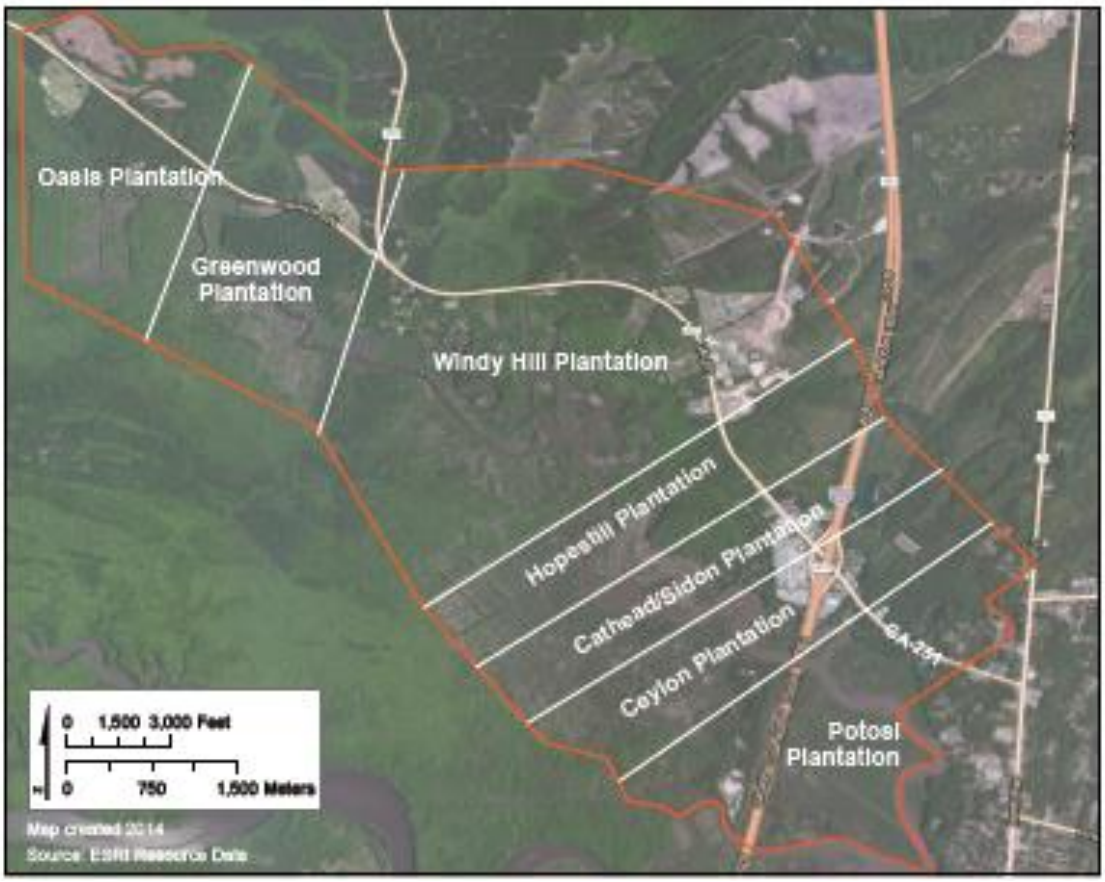


Fig. 21 Cathead Creek Rice Plantations
Telling Time by the Tides, 2014. Courtesy of New South Associates

Because these values changed over the course of time and events, the organization of space also changes. Today, the road shown in peach on the above map, is our East

Coast's major highway, Interstate 95. It runs north-south while the local Route 251 runs east-west through this former plantation landscape. Rice is no longer grown on this land, but it is served at the restaurants located at this exit. Perhaps Ruby Tuesday's has rice on the menu.

Towns often came before farms because they began as trading posts, defensive forts or transfer points in river navigation, which was an easier way to travel than over land on bumpy dirt roads in stagecoaches with wooden wheels or on horseback. The preindustrial town represents for most Americans the most picturesque and appealing aspect of our past…with its squares and tree-lined streets, its churches and graveyards (Jackson 1980).

In the early 1700's, James Edward Oglethorpe designed Savannah, Ebenezer and Darien with large squares surrounded by trust and private lots. Oglethorpe's design for the ward system was to create a protected central square to be used for military drills and for protection in case of attack, surrounded by four trust lots to be used for public, municipal or religious purposes. These were flanked by lots of equal size for each household. The Oglethorpe plan is still in existence in Darien in an expanded form. Over the years, individual property boundaries have been combined and adapted to suit the needs of successive generations, but several open squares still remain for various public uses.

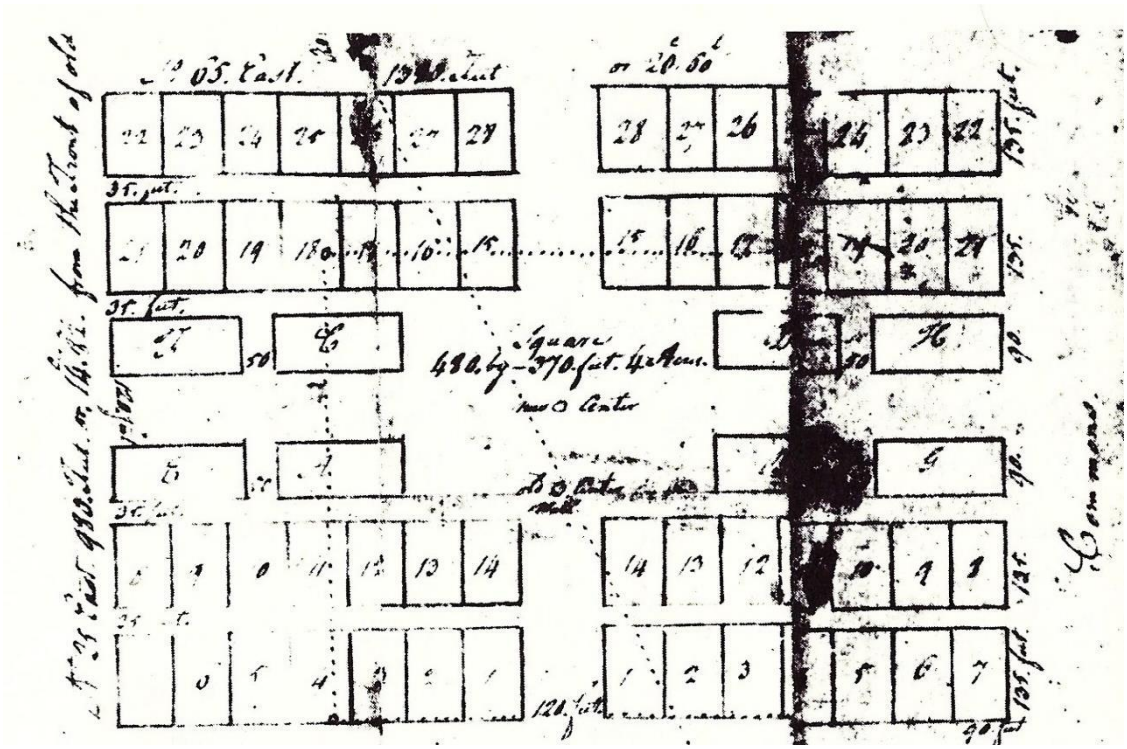


Fig. 22 1736 Survey of Darien
General James Edward Oglethorpe
The First One Hundred Years of Town Planning in Georgia (Sears 1979)

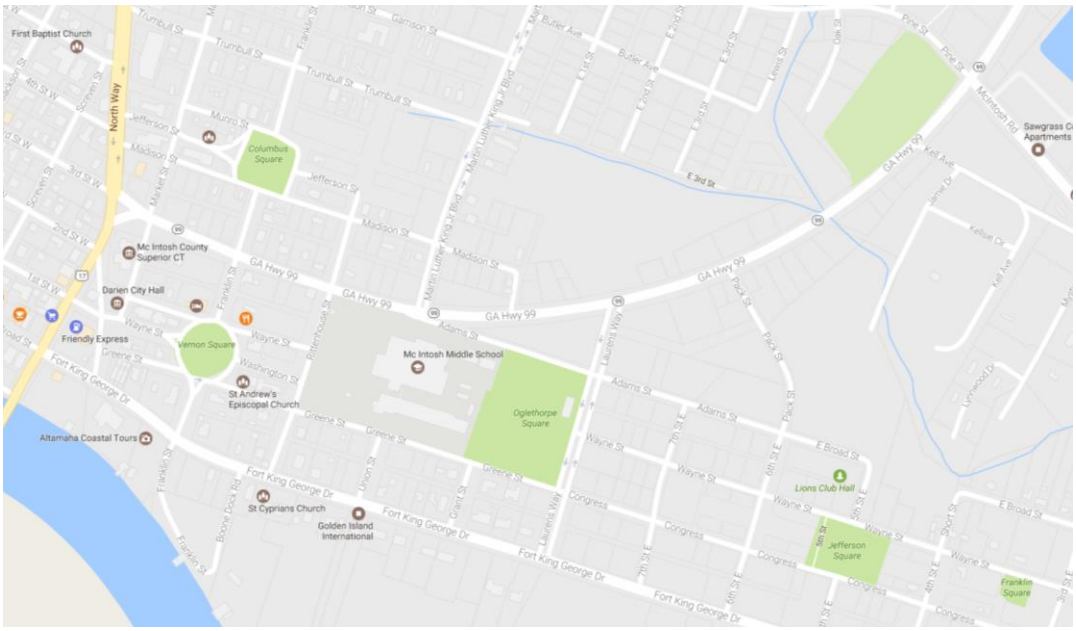


Fig. 23 Google Map of Darien Squares. Accessed April 15, 2017
https://www.google.com/maps/place/Darien,+GA+31305/@31.3691136,-81.426896,17

By 1806, Darien, prosperous from the shipment of inland cotton and coastal rice, was resurveyed by Thomas McCall with its one square blossoming into four and the addition of a grid pattern with Bayard Square on the west side of town, where the First Presbyterian Church now sits.

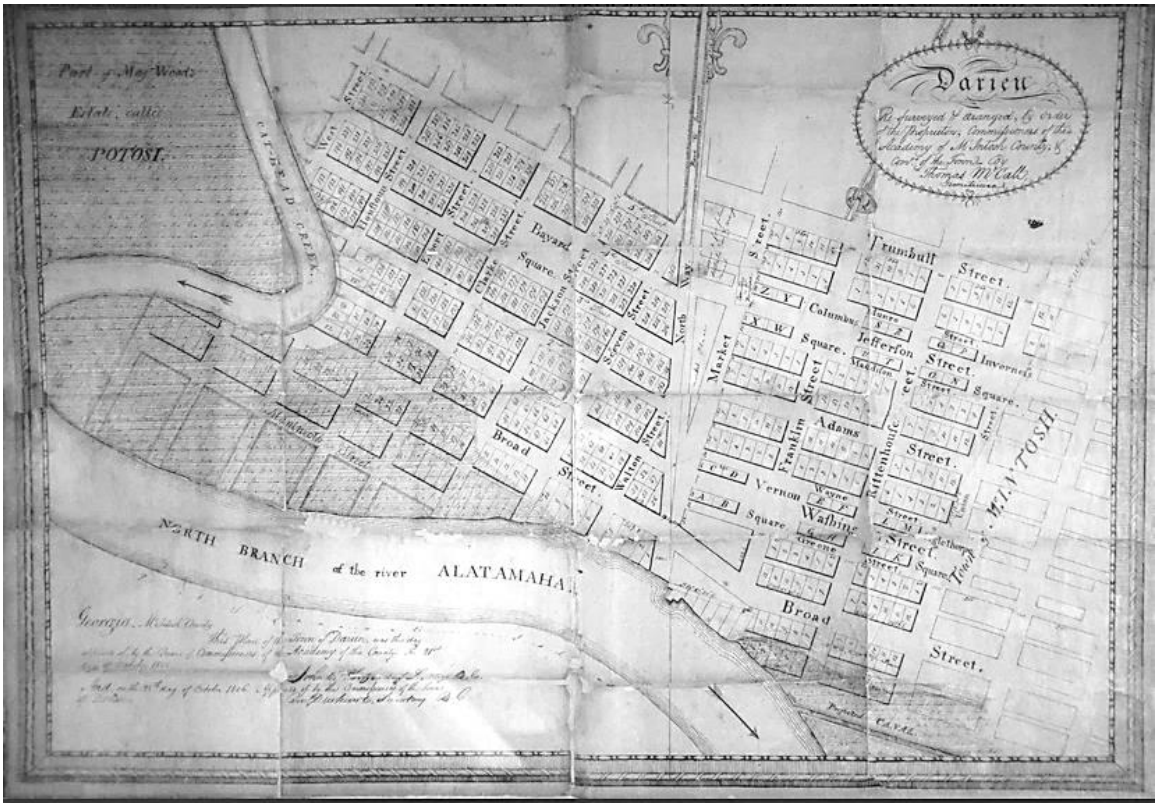


Fig.24 Plan of the Town of Darien, Resurveyed & arranged by order of the proprietors; Commissioners of the Academy of McIntosh County; & Commissioners of the Town. Thomas McCall, Geometrician. 1806.
Courtesy, Georgia Archives, Historic Map Collection, hmf0045

In 1818, the City of Darien was incorporated and the county seat moved from Sapelo Bridge to Darien. The historical marker reads:

> "Sapelo Bridge, on the old Savannah to Darien Road 200 yards east of this spot, was the seat of McIntosh County from 1793 to 1818. Here the Court House and other public buildings stood; here, too, were the Armory and Muster Ground for the McIntosh County Cavalry Troop, and here the Stage Coaches stopped to refresh the passengers and change horses."

J.B. Jackson explains how changes in the history of roads as paths American Indians used for trading or their trails connecting hunting grounds, eventually became wagon or stagecoach trails, then railroad tracks and eventually paved roads, straightened and widened for the automobile connecting even small towns to large cities. The railroad came late to McIntosh County. During the early stages of the timber boom in Georgia, the cut logs were tied together to make large rafts and then floated down the Altamaha River, where they were processed into boards in one of several saw mills along McIntosh County's riverfronts and shipped in schooners and later steam ships to other parts of the country and the world as mentioned earlier.

Fig. 25 Schmidt Timber Room, Darien, GA 1910. Photo by Huron H. Smith.
Original material: 5x7 inch glass negative
Courtesy, The Field Museum, ID No. CSB31316

It was during this prosperous time that timber barons built fancy residences around the attractive Vernon Square, many of which still remain. Darien was the leading pitch pine timber port on the U.S. Atlantic seaboard and second in the world only to Pensacola, Florida (Stewart 1988).

However, once the up-river timber growing closest to the Altamaha River had all been harvested, a new method of shipping the timber that was located farther from river transportation had to be realized. An alliance of Darien timber brokers and sawmill owners collaborated to have a rail line built from Tattnall County to Darien. Taking five years to be completed, the Darien & Western Railroad Company finally reached its Columbus Square terminus in 1895. Darienites could now travel from downtown Darien by rail north to Savannah and south to Jacksonville, Florida via a connection on the Seaboard Air Line Railway at Darien Junction (later Warsaw) in the center of the county.

It wasn't until 1914 that the Georgia Coast & Piedmont Railroad (who acquired the Darien & Western Railroad Company in 1906) built the trestle to cross the Altamaha River. In order to travel to St. Simons Island, it was necessary to board the steam boat, Hessie, which made regular voyages to and from Darien. Only seven years after the trestle's completion, it was converted to a plank road for automobiles. Five years later paving began on U.S. Highway 17 (Sullivan 2000) and the current bridge, built in 1944, has been conveying traffic from Brunswick to Darien for over seventy years. This next generation saw these rapid changes in transportation. The 1944 bridge is now considered a historic structure and was inventoried as part of Phase I of the McIntosh County Historic Resource Survey. This bridge is being considered for reconstruction at this time.

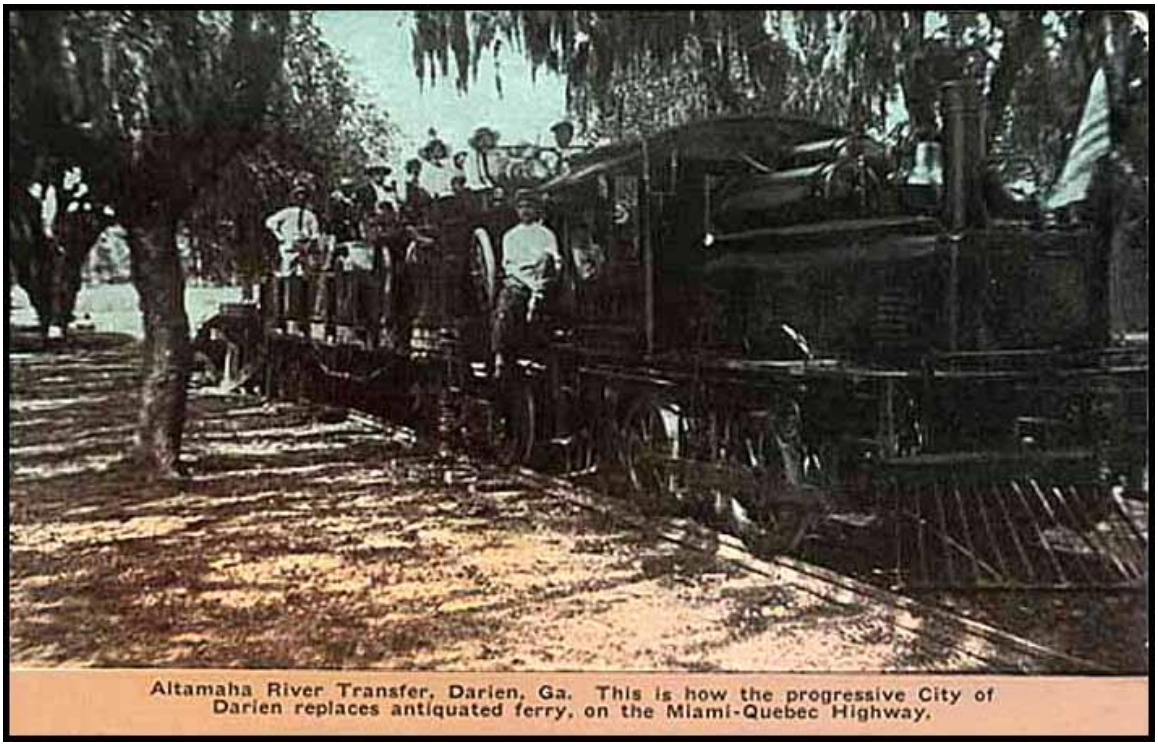


Fig. 26 Altamaha River Transfer
Courtesy of Ed Jackson

Fig. 27 Darien Bridge US 17 South. The new and current bridge (left), built in 1944 replaced the old plank bridge across the Darien River.
Photo courtesy of Georgia Historical Society, collection MS 1360-16-11-04.

The changes in Darien's transportation systems were brought about by changes in industry: the decline of the timber industry and the increased prevalence of automobiles. Today's automobile corridors are built with the traveler in mind. Interstate 95's Exit 49, in McIntosh County accommodates the traveler with its motels, restaurants and gas stations. Before the interstate was complete in 1977 it was Eulonia, in McIntosh County, that served travelers on US 17 with its many motels, cottages and restaurants.

C. Reinhold Noyes, in "The Institution of Property," describes the progression of land development in the United States as "transfer of land from federal title, actual settlement and economic development." Bonds between land and the families that owned and gained sustenance from the land can be very strong, even creating an identity for those families and for the community. This changes over time as land ownership is transferred to each successive owner. The change in ownership usually results in a change in the landscape. Today people are no longer tied to the land as they were when numerous families farmed their own property. On Sapelo Island, many family members whose African American ancestors settled or remained on the island when slavery was abolished, have chosen to leave the island which is only accessed by ferry or other boat, and has no grocery stores, movie theaters or even schools for school-aged children. Property there has sometimes been sold to those desiring a seasonal residence. They have no ties to the heritage or the culture of the land and build residences more in alignment with standards on the mainland. Many people are unhappy the historic fabric is changing on this culture-rich landscape that houses artifacts dating back to the late Archaic period.

The aspect that distinguishes one area of landscape from another "is the different trajectory of change along which they have traveled." The connections in the long chain of the events of history, Fairclough explains, have links of unequal size or weight, some that are long-lived, and some that are ephemeral or slow, cumulative and unnoticed, thus not recorded (Fairclough 2006). We can see this in the progression of the port cities of Savannah, Darien and Brunswick. Although a thriving port at the turn of the twentieth century, characteristics of the landscape and events in the chain of history propelled both Brunswick and Savannah to become or remain prosperous international ports in the current century, but because access to the port of Darien is not as easily navigated by large ships due to shifting sandbars and shoals, this landscape aspect may have caused the city of Darien to remain more like a small town. Often, when industry bypasses a town or city, clearer evidence of past landscapes remain and provide a venue for research and for the enjoyment of those with interest in cultural heritage. It is a positive aspect that can be capitalized on through historical interpretation.

CHAPTER 5

CARTOGRAPHY

The History of Cartography

Any discussion of maps should begin with an overview of their history. Maps have always been created to give understanding to the world in which we live. Whether we are mapping the navigation of the Mediterranean Sea on a piece of animal hide, the block by block location of cholera cases in the city of London on paper, or the fastest route to the maternity hospital on the screen of our smart phone, maps provide the humans who read them with information related to a geographic location.

A map is a graphic representation of the environment within which human knowledge has been symbolized and transmitted (Robinson and Petchenik 1976) whether via ink on an engraved document or the bits and bytes of satellite data providing us with global positioning coordinates. It creates relationships between isolated landscape elements to present a coherent message that answers the specific needs of its intended audience (Brotton 2014) or serves the purpose given to it by its cartographer or his sponsor.

Many of the earliest maps depicted a representation of the entire known world with the mapmaker's location at its center. The Babylonian World Map, is a small clay tablet carved between 750 and 500 BCE. It depicts the city of Babel, surrounded by neighboring cities in the center of a circular sea. Dangerous places where beasts roam and the sun does not shine encircle the edges of the map. These "Terra Incognita" or unknown lands, are common to many early maps (Brotton 2014).

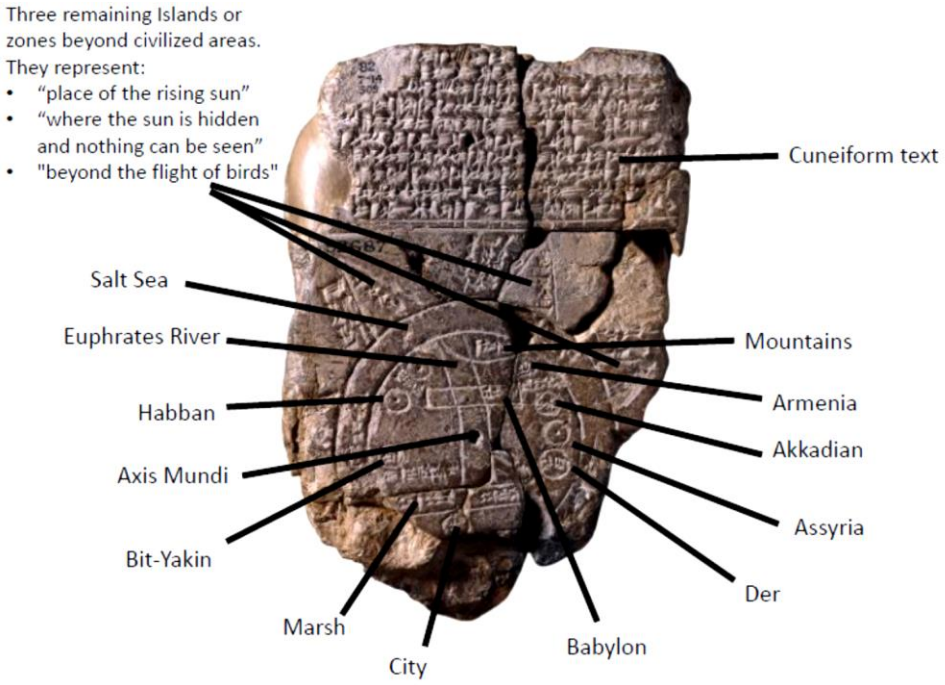


Fig. 28 Babylonian World Map. The carving on the Babylonian World Map is a schematic representation of the world centered on Babylon, surrounded by other cities such as Armenia and Assyria. The Euphrates River bisects the center, north to south and the sea encircles the whole. Beyond the known world is "the place of the rising sun", the place "where the sun is hidden and nothing can be seen, and the place "beyond the flight of birds." The clay tablet resides at the British Museum (BM 92687). Description created using Catherine Delano Smith's article, "Imago Mundi's Logo, the Babylonian Map of the World."

The foundations of scientific mapmaking originated in ancient Greece. It can be said that the Greeks' contributions were more advanced than most mapmaking prior to the fifteenth century (Hodgkiss 1981). The use of mathematics to measure the spherical shape of the earth and the advent of a grid system with which to consistently position locations on the map can be credited to Eratosthenes, Hipparchus, and later Ptolemy who constructed a coordinate system with which to depict the round earth on a flat map and locate places on the map (Hunt 2000). The Chinese had also invented a grid system for mapmaking approximately a century after Ptolemy in 267 A.D. (Hodgkiss 1981).

Fig. 29 World Map by Ptolemy, 150 CE (redrawn in the 15th century). Note the system of longitude and latitude lines used as reference markers for locating the continents. Original resides at the British Library, Harley (MS 7182, ff 58v-59).
https://commons.wikimedia.org/wiki/File:Ptolemy_World_Map.jpg

During the middle ages, while Arabic scholars improved upon Ptolmey's research, Europeans made maps that combined religious thought with geography. Their "T" and "O" shaped mappae mundi, or charts of the world, oriented map viewers to the East at the top of the map with the Holy Land at the center of the map. The literal meaning of the word 'orientation' means 'facing east.' The "T and O" shape divides the earth into the then three known continents of Europe, Africa and Asia with the ocean encircling it all (Tally 2013). In 1109, Mohammed Al-Idrisi created such a map for King Roger of Sicily and another map using all available data on latitudes and longitudes and the distances between places in order to locate them within their appropriate climatic zones (Figure 31).

Fig. 30 Al-Idrisi World Map
https://commons.wikimedia.org/wiki/File:The_map_of_al-Idrisi_dates_from_1154.jpg
Image courtesy of Wikimedia Commons. Image is in the public domain.

Fig. 31 al-Idrisi Climate Zone Map. 1154
https://commons.wikimedia.org/wiki/File.jpg
Image courtesy of Wikimedia Commons. Image is in the public domain.

The Carte Pisane, c. 1300, is the earliest extant portolan chart of the kind that assisted navigators in exploring the world. Portolan charts transformed the detailed written descriptions of coastlines, harbors and offshore hazards that sailors used up until this time, into graphical charts, based on the sixteen compass directions (Brotton 2014). The Carte Pisane also includes a scale which would become standard once the printing of maps became prevalent in the fifteenth century (Hodgkiss 1981). The printing press allowed maps to be more widely disseminated, understood, and utilized.

Fig. 32 Carte Pisane. The map is named for Pisa where it was rediscovered. Current Location: Paris, Bibliotheque Nationale de France. https://commons.wikimedia.org/wiki/File:Carte_Pisane_Portolan.jpg Image courtesy of Wikimedia Commons. Image is in the public domain.

From the fourteenth century to the early seventeenth century, several innovations provided the basis for all surveying and mapping until World War II. They are the use of the magnetic compass already in use in China, Mercator's corrected versions of Ptolemy's map projections, the plane-table, the theodolite, and the publication of logarithmic scales for use in navigation. With these inventions, it became easier to navigate the seas and calculate the distance from one location to another with the use of astronomy.

Paving the way that digital maps are constructed today, by organizing the map's information into layers in order to create themes, were nineteenth century developments in statistics, data collection and printing technology (Friendly 2008). The geographical aspects of the map create a backdrop for understanding the quantitative thematic information. (Boonstra 2013) One of the first thematic maps that used the chloropleth method of mapping statistics was made to map the density of slave population across the

recently seceded Southern states by using half-tones to note the variations in the density of slave-holdings in each of the counties in Southern states.

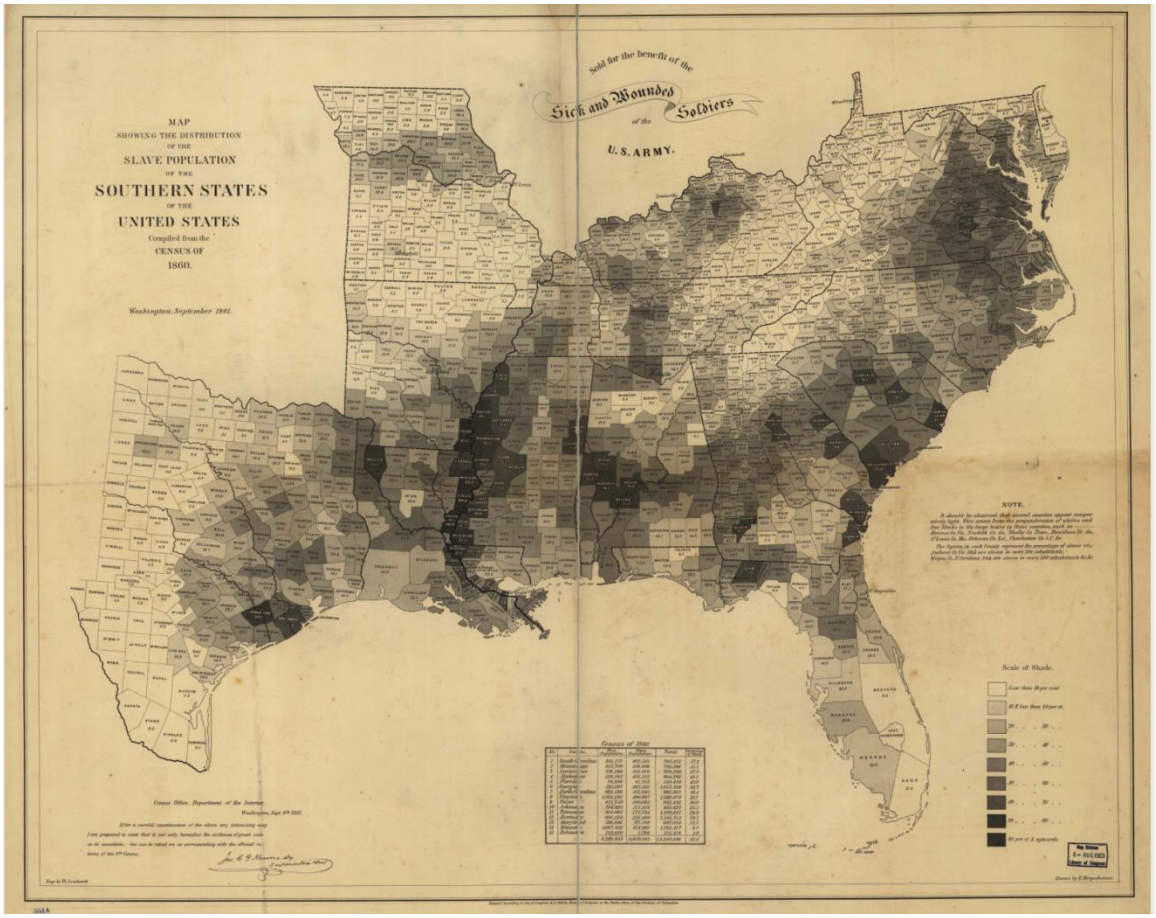


Fig. 33 Chloropleth Map Showing Slave Population.
The 1860 United States census provided a basis for the statistics shown in this map.
Hergesheimer, E. Map Showing the Distribution of the Slave Population of the Southern States of the United States. Compiled from the census of 1860. Washington Henry S. Graham, 1861. Map. Retrieved from the Library of Congress, https://www.loc.gov/item/ody0314/. (Accessed April 16, 2017.)

A century later, Ian McHarg, a landscape architect, layered maps printed on sheets of acetate in order to determine sensitive areas unsuitable for development. This layering of statistical information over a cadastral (property) map had a major impact on what was to become Geographic Information Systems (GIS). Roger Tomlinson is considered to be the father of GIS. Tomlinson and Pratt, with the help of

customized IBM software, organized the various layers of data compiled during the Canadian Land Inventory in 1964.

Geographic Information Systems (GIS) is a computer application that organizes information that occurs at a particular geographic location by associating data held in a spreadsheet with spatial data on a digital map, representing map features as: points (buildings, objects), lines, (roads), and polygons (anything with a boundary like a city or a park). Any type of data, including electronic books, photographic images, videographic images and audio recordings, as long as geographic coordinates can be paired with these, can be located on a map. For instance, events in the novel, *Midnight in the Garden of Good and Evil* whose story took place in the city of Savannah, Georgia, can be located on a map that includes the city of Savannah. More serious subjects can be mapped as well, like a correlation between the location of crimes occurring in certain neighborhoods and the rate of unemployment in those neighborhoods. Superimposing one category of statistics over another category as layers on the map, reveals connections within each layer of data that coincides with the location on the map.

When McHarg and Tomlinson were utilizing map layering, the first earth-orbiting satellites, originally used by the military during the Cold War era, were beginning to provide us with location fixing and satellite imagery. This eventually led to Global Positioning Systems being available to the public. GPS along with web-based digital mapping like the original Mapquest in 1996 were eventually combined for use in portable GPS navigation devices. Today this capability is used in the smartphone technology we use when searching Google maps (McClay 2014).

Mapmaking has brought man from carving on stone tablets to inventing printed paper maps to handheld devices on which to create a map in real time with your own movement in space using global positioning satellites. Mapmaking is ubiquitous, individual and instantaneous for the price of a cell phone and a mobile plan.

Critical Cartography

As we can see from the evolution of mapmaking, maps became more scientific, more mathematically derived, and more precise, at least from a technical standpoint. In 1989, however, British geographer, J. B. Harley, in response to the burgeoning use of Geographical Information Systems for constructing maps, determined it was time to write a new cartographic history that challenged the assumptions that cartography was an accurate and scientific discipline unaffected by any biases of the mapmaker. Rather than objective scientific techniques, Harley postulated that maps were and always are socio-political texts and can be critiqued with regard to the specific cultural and historical time period in which they were created (Harley 2001). The discipline of critical cartography was born with the intent of examining the assumptions inherent in the way we view, understand, and interact with maps.

As we know from the historic maps discussed earlier, cultures of antiquity often constructed maps with their part of the world or with their important world views at the physical center, such as Muhammed Al-Idrisi's World Map. The understandings with which they produced their maps were based on the values of the prevailing religious, political, or social views embedded in each society.

Maps function as "symbols of power, authority and national unity" (Monmonier 1996). Queen Elizabeth I commissioned of Christopher Saxton in the late sixteenth century, an atlas of the survey of all of England. The atlas bound together the various counties of England asserting their unity under Elizabeth's rule (Monmonier 1996). Maps also reflect the hierarchy within society and, at the same time, reinforce it (Monmonier 1996). The various symbols used for the hierarchy of cities in the Peutinger Table indicated the cities' size and function based on the number of towers or the configuration of towers and walls. (Drakoulis 2007).

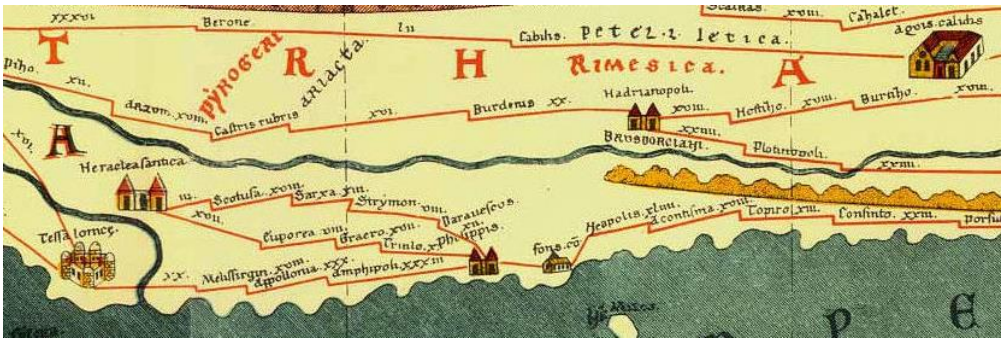


Fig. 34 Part of Tabula Peutingeriana. Showing Eastern Moesia Inferior, Eastern Dacia and Thrace, 1-4th century CE. Facsimile edition by Conradi Millieri, 1887/1888 https://commons.wikimedia.org/wiki/File:TabulaPeutingeriana.jpg

The map legitimizes social hierarchy in its signs and symbols (Harley 2001, Monmonier 1996). Maps are "selective statements of authority and control as valuable (and as value-laden) as any declaration, manifesto, or other sort of text. Historians need to read them as such" (Nobles 1993).

Through the height of lettering, the images in their cartouches, or the selection, omission or simplification used when making maps, " maps state an argument about the world" (Harley 2001) and appeal to a potential readership. Maps are "crucial to the maintenance of state power—its boundaries…its commerce… its military strength…and manifest in particular acts or phases of deliberate policy" (Harley 2001, Monmonier

1996) such as in formulating treaties. The Mitchell Map, for example, published in 1755 was used not only in the treaty of Ghent in 1814 to determine the United States-Canada border, but was still used in border disputes in the 1930's (Edney 2008).

"A map is a silent arbiter of power" (Harley 2001) in the way it is made using standardized symbols that "discipline" the way the world is understood through its two-dimensional representation. And does this standardized way of viewing a landscape, Harley asks, risk eradicating the alternative visions of what our landscapes were, are and could become? Do we forget our landscape's histories, hidden or evident, in favor of progress? "While the map is never the reality, in such ways it helps to create a different reality" (Harley 2001). For example, when developers such as Robert Moses[18] designed plans that erased entire neighborhoods in the name of urban renewal, the lines on his maps acquired an authority about what New York City should look like.

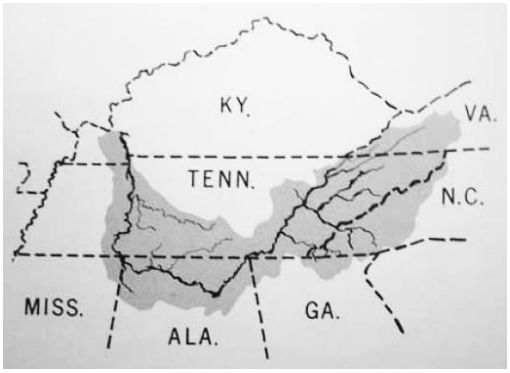


Fig. 35 Tennessee Valley Authority (Fraley 2011)

When the Tennessee Valley Authority sought to utilize the natural resources in Appalachia, their simplified maps were made with the focus on economic development through the use of coal, asbestos and hydro-electric power. They drew state boundaries with dashed lines and omitted the towns that might soon be obliterated under the guise of improvement (Fraley 2011)

[18] Robert Moses was a New York "power broker" who held many simultaneous governmental or quasi-governmental positions from the 1920's through the 1960's in order to transform the New York metropolitan area with his visionary, yet often controversial, construction projects, several of which bear his name.

In colonial America, maps often claimed, on paper, land that was yet to be occupied by its conquerors (Harley 2001). Maps were used to legitimize conquest and colonial promotion, as can be seen in the various maps produced by the Spanish, French and British as they vied for power over the North American continent with little regard for the American Indians (Harley 2001), each conqueror naming rivers and towns in their own language. The surveyor doesn't simply replicate the environment," but measures the land with a purpose for use in warfare, empire building, boundary making, or the local assertion of individual property rights (Harley 2001). Even the way we gerrymander our congressional districts is a form of boundary making for a political purpose.

"…maps rely on imagery to represent or to simulate reality… the image imposes a kind of a priori perception that shapes subsequent experience" (Nobles 1993). Historic maps allow us to read space as history because the explorers who made them, chose directions, applied names, imagined goads, and settled towns (Carter 1987). Since the English Trustees who were in charge of colonial matters in North America needed maps to discuss political, defensive and commercial decisions, "the maps sent back to England by men like South Carolina's Thomas Nairne, helped shape British policies toward the region that would become the colony of Georgia, and what they contained was frequently incorporated into later maps and used as evidence to support schemes for colonization and exploitation" (Nobles 1993).

In Nairne's map, the colony of South Carolina extends from its northern border with North Carolina, south to the then border with Spanish Florida, and west to the circuitous border of the French territory (pink line) surrounding the Mississippi River. It clearly marks the location of Indian tribes and includes the number of men in each tribe.

Fig. 36 “A Map of South Carolina.” The above map is the only surviving version of the Thomas Nairne “A Map of South Carolina Shewing the Settlements of the English, French, & Indian Nations from Charles Town to the River Missisipi." It was published in London in 1711 as an inset to Edward Crisp's "A Compleat Description of the Province of Carolina in 3 Parts." Map courtesy of the Library of Congress.

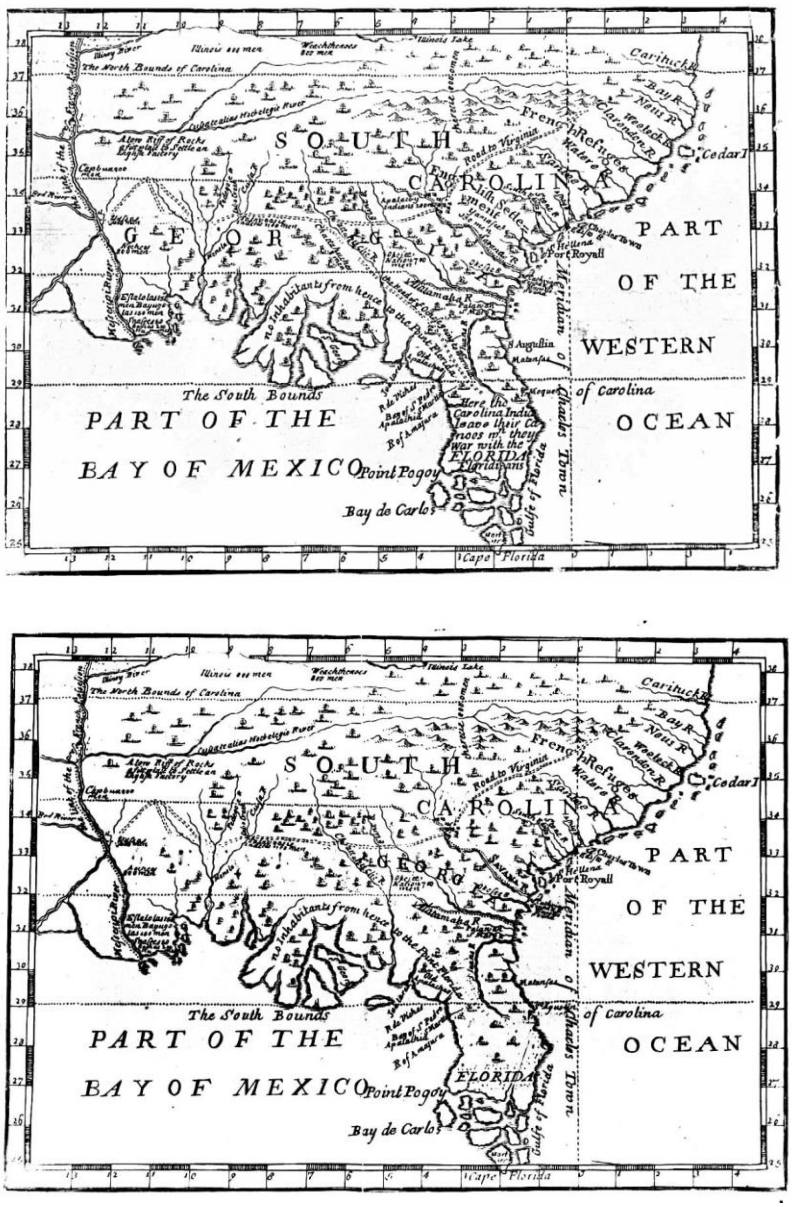
The English, based on their predetermined notions of spatial, economic, and social organization, employed a settlement policy for the colonies of a large, permanent population (Nobles 1993) which, as mentioned before, differed from the Spanish use of coastal mission settlement. This aggressive development strategy was needed to curtail inroads the French were making on the southern territory from the Mississippi River area and deter the threat of Yamasee Indian and Spanish attack. In 1720, “South Carolina agents, John Barnwell and Joseph Boone, transmitted a detailed report on the need for a system of fortified outposts to protect the colony's frontiers and Indian trade. Most urgently required, they argued, was a fortification at the mouth of the Altamaha River. Such an outpost, it was felt, could become the center for settlement in the debated land” (Spalding 1989).

According to Louis de Vorsey, Jr., James Edward Oglethorpe, the chief promoter of the proposed colony of Georgia, produced several maps based on the 1708 Nairne map which were carefully calculated in their "cartographic language in his efforts to launch Britain's last colonial venture on the Atlantic seaboard of North America" (de Vorsey 1986). In comparing Oglethorpe's maps to that of Thomas Nairne's earlier, "Map of South Carolina Shewing the Settlements of the English, French, & Indian Nations from Charles Town to the River Mississippi," de Vorsey remarks on the glaring relocation by Oglethorpe of the French to the western side of the Mississippi River, the removal of the capital letters defining the "French Settlement" in the lower Mississippi Valley, the complete removal of the French Fort Louis and the Spanish Pancicola Fort located near present day Mobile, Alabama and Pensacola, Florida respectively. Oglethorpe adds the the name of the colony of Georgia in capital letters.

On his second map, he removed the Yammasee, Chatahoochee and Apalachy Indian tribes and slid the location of Spanish St. Augustine below the line marking the "South Bounds of Carolina," perhaps one hundred miles below its actual location, thereby removing the immediate threat of possible menacing enemies. "Oglethorpe and his associates had accomplished, with the engraver's stylus, what countless Carolina border raiders and regular troops had failed to produce—frontier pacification in the debatable land..." in order to convince Parliament of the Georgia scheme (de Vorsey 1986).

The second version of the map was included in two editions of *Reasons for Establishing the Colony of Georgia . . . With some Account of the Country and the Design of the Trustees* and in Samuel Smith's *A Sermon Preached before the Trustees for*

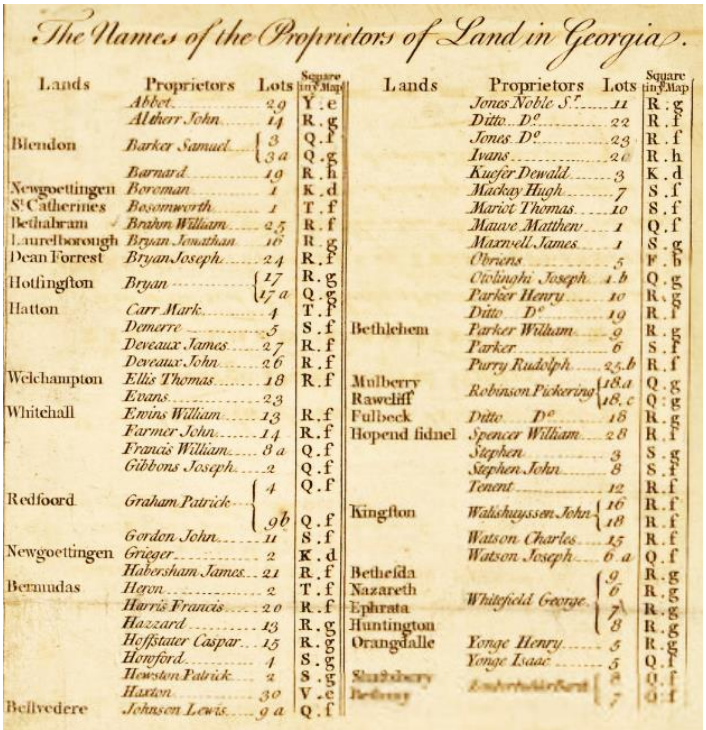
Establishing the Colony of Georgia, all of which were published by the Trustees in 1733. *Reasons*, which was written by Benjamin Martyn, was sent to each member of Parliament to support a petition by the Georgia Trustees for a large government subsidy for the new colony.



Figs. 37a & 37b 1732 & 1733 Maps of Georgia
Louis de Vorsey attributes these maps to James Oglethorpe.
Courtesy of University of Georgia, Hargrett Library.

Another map was also used to enhance the attractiveness of settling this new continent. In the mid-1700's, William Gerard De Brahm was the surveyor general of the southern states. His 1757 map of South Carolina and Georgia delineates his surveyed locations of the plantations along the southern coasts and riverine waterways, referencing the specific plantations and their owners listed in a table much the way our GIS maps represent attributes contained in a spreadsheet. Through doing so, the map thus indicates the well-established plantations of the time as well as the distance to each settlement. The map also locates various physical features on the land to indicate their possibility for development such as bluffs upon which to build an abode free from flooding or a swamp that could be cleared and planted with rice. The agricultural potential of the various land ecologies and natural resources indicated by the symbols for "swamp," "marsh," "pine," and "oak" (Stewart 2011) (swamps and marsh being desired for rice cultivation and pine and oak for firewood and construction) were all indicated for the profitability of the colony and for the provision to England of raw materials.

Fig. 38a Section, de Brahm Map of South Carolina and Georgia
De Brahm, John Gerar William, Approximately 1799, William Bull, and Thomas Jefferys. *A map of South Carolina and a part of Georgia. Containing the whole sea-coast; all the islands, inlets, rivers, creeks, parishes, townships, boroughs, roads, and bridges; as also, several plantations, with their proper boundary-lines, their names, and the names of their proprietors*. London, T. Jefferys, 1757. Map. Retrieved from the Library of Congress, https://www.loc.gov/item/75693002/. (Accessed March 18, 2017.)



The Names of the Proprietors of Land in Georgia.

Lands	Proprietors	Lots	Square in the Map
	Abbet	29	Y . e
	Altherr John	14	R . g
Blendon	Barker Samuel	3	Q . f
		3 a	Q . g
	Barnard	19	R . h
Newgoettingen	Boreman	1	K . d
St Cathermes	Bosomworth	1	T . f
Bethabram	Brahm William	25	R . f
Laurelborough	Bryan Jonathan	16	R . g
Dean Forrest	Bryan Joseph	24	R . f
Hotfingston	Bryan	17	R . g
		17 a	Q . g
Hatton	Carr Mark	4	T . f
	Demerre	5	S . f
	Deveaux James	27	R . f
	Deveaux John	26	R . f
Welchampton	Ellis Thomas	18	R . f
	Evans	23	
Whitehall	Ewins William	13	R . f
	Farmer John	14	R . f
	Francis William	8 a	Q . f
	Gibbons Joseph	2	Q . f
Redfoord	Graham Patrick	4	Q . f
		9 b	Q . f
	Gordon John	11	S . f
Newgoettingen	Grieger	2	K . d
	Habersham James	21	R . f
Bermudas	Heron	2	T . f
	Harris Francis	20	R . f
	Hazzard	13	R . g
	Hoffstater Caspar	15	R . g
	Hereford	1	S . g
	Hewston Patrick	2	S . g
	Haston	30	V . c
Bellvedere	Johnsen Lewis	9 a	Q . f

Lands	Proprietors	Lots	Square in the Map
	Jones Noble Sr	11	R . g
	Ditto Dº	22	R . f
	Jones Dº	23	R . f
	Ivans	20	R . h
	Kuefer Dewald	3	K . d
	Mackay Hugh	7	S . f
	Mariot Thomas	10	S . f
	Mauve Matthew	1	Q . f
	Maxwell James	1	S . g
	Obriens	5	P . b
	Otolinghi Joseph	1 b	Q . g
	Parker Henry	10	R . g
	Ditto Dº	19	R . f
Bethlehem	Parker William	9	R . g
	Parker	6	S . f
	Parry Rudolph	25 b	R . f
Mulberry	Robinson Pickering	18 a	Q . g
Rawcliff		18 c	Q . g
Fulbeck	Ditto Dº	18	R . g
Hopend fidnel	Spencer William	28	R . f
	Stephen	3	S . g
	Stephen John	8	S . f
	Tenent	12	R . f
Kingston	Walshuyssen John	16	R . f
		18	R . f
	Watson Charles	15	R . f
	Watson Joseph	6 a	Q . f
Bethesda		9	R . g
Nazareth	Whitefield George	6	R . g
Ephrata		7	R . g
Huntington		8	R . g
Orangdalle	Yonge Henry	5	R . g
	Yonge Isaac	5	Q . f
Shaftsbery		2	Q . f
Bedford		7	Q . f

Figs. 38b & 38c Section, de Brahm Map of South Carolina and Georgia

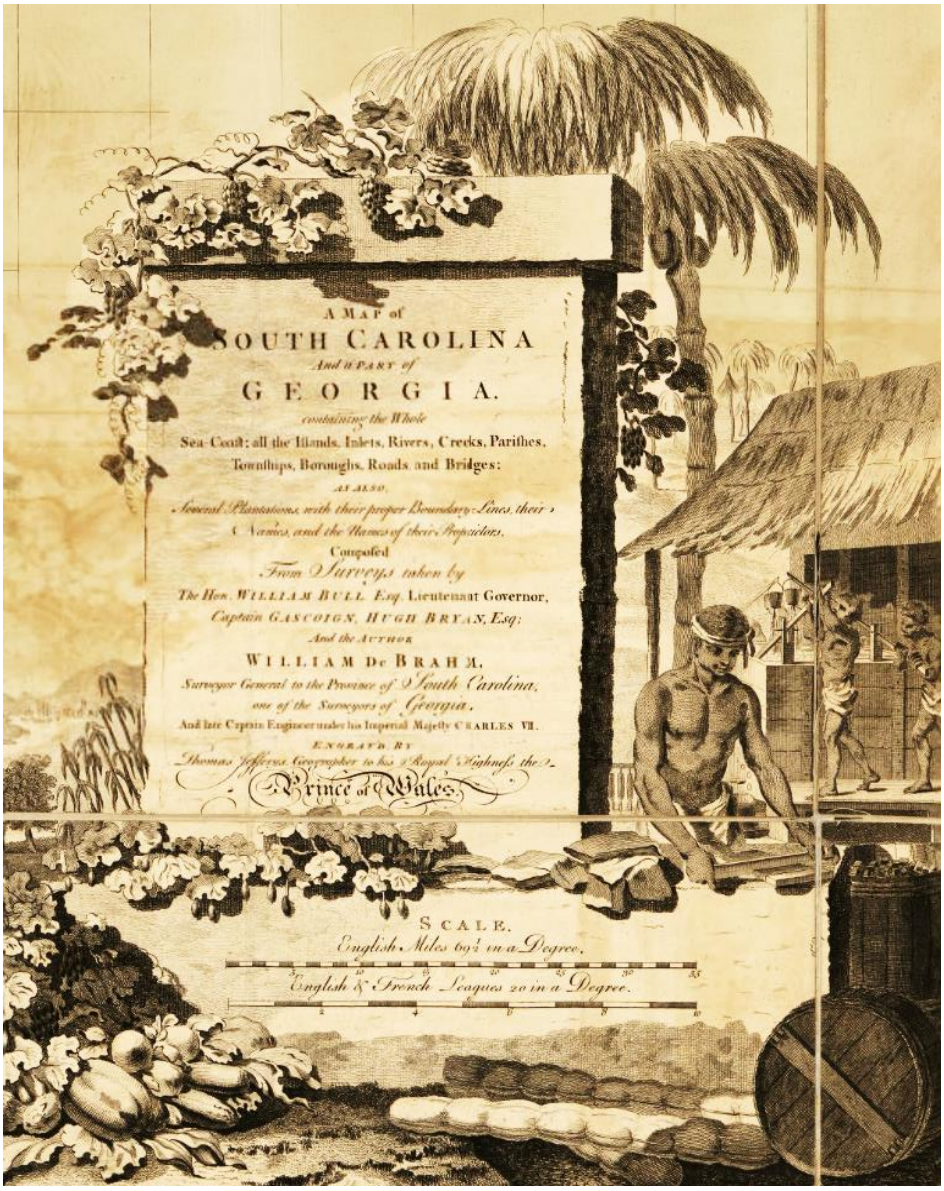
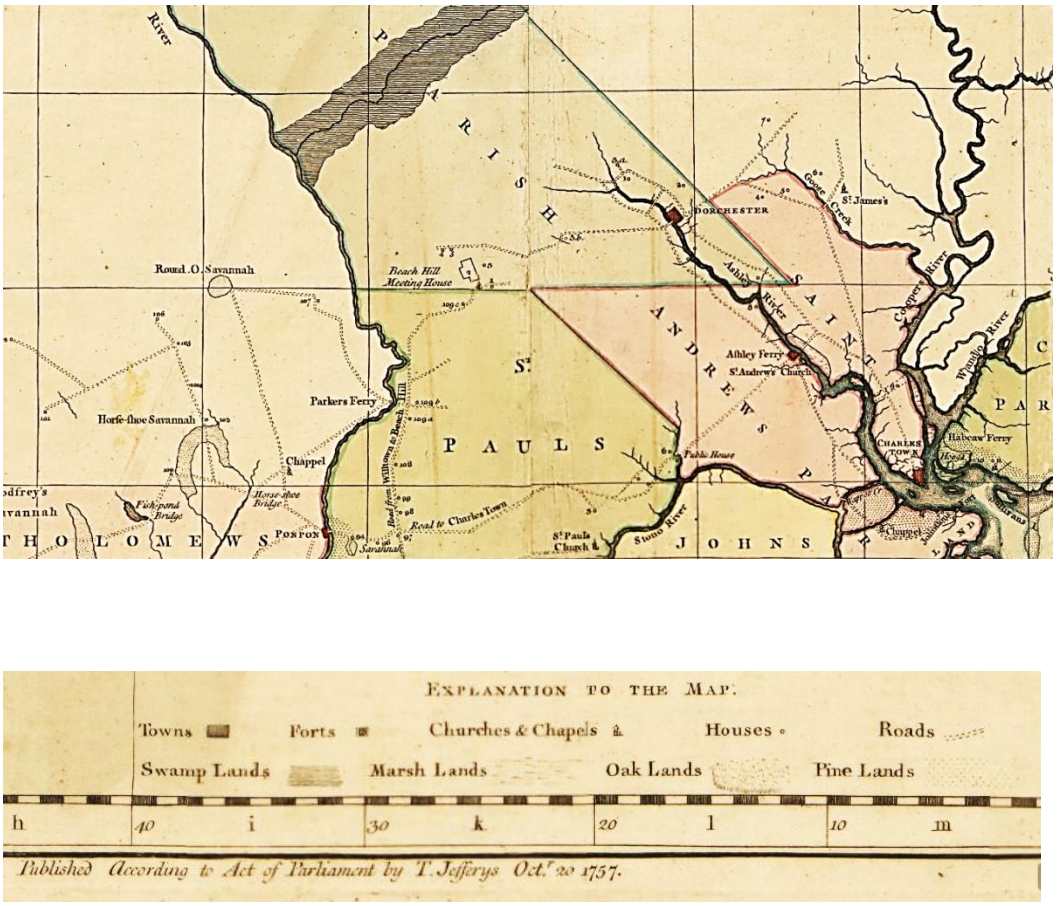


Fig. 38d Section, de Brahm Map of South Carolina and Georgia

The cartouche or illustration that was typical of the more elaborate maps of this time, declares, with its image of an engraved stele or monumental stone slab, the affirmation of Britain's claim on this coastal territory as well as the abundant yield of agricultural production including the sanctioning of enslaved labor necessary for its continuation.



Figs. 38e & 38f Section, de Brahm Map of South Carolina and Georgia

The hand coloring on this map delineates the political boundaries of the parishes into which the land was divided under the Crown's rule. The legend indicates the land characteristics and map elements.

"DeBrahm's map emphasizes the environmental and property relationship and political and economic structure of colonial plantation society…" (Stewart 2011) while indicating the important landscape elements needed for survival. It was the prevailing belief of the time period that crops grown at one latitude in one part of the world would necessarily be able to be grown at the same latitude in another part of the world, For example, silk produced by silk worms on mulberry bushes in Nagasaki, Japan would

necessarily be able to be produced in Savannah, Georgia at the same 32nd north parallel. Using world maps to prove this theory would seem a logical selling point in colonial promotion. Unfortunately, silk production did not prove to be a successful endeavor in the southern colonies because of factors due to plant species (Sarah Ross 2016).

As has been shown, maps (and their accompanying literature) were often used creatively in colonial times to tell landscape stories that would benefit those with a particular agenda in the settlement and economic development of the future United States by enhancing the appeal of the existing landscape. As shall be discussed next, maps today are being used by historians, museums, municipalities and the general public to promote *their* individual missions through the storytelling function that locates history in time and space.

Critical Cartography Today

If maps are a manipulated form of knowledge helping to fashion the features represented on them (Cosgrove and Daniels 1988, Harley 2001), then modern day mapmakers can use digital versions of maps, to not only inventory the natural world in quantitative terms, but also to spatially document its qualitative features, engage critical social theory through the spatial organization of a location, or make political decisions evident (Thatcher et al. 2016).

This is important based on some of the critique within the cartographic community today. The examination of maps by many critical geographers of the last three decades has resulted in a definition of the dualities surrounding the production and consumption of maps. Maps are seen both as scientific and ideological constructs; they

are created both by experts and laymen; the lines between mapmakers and map users have become blurred; there are objective and subjective understandings of maps; and maps are seen as representations of a space and a stage upon which to participate with the space. From this last duality, Del Casino and Hanna ask, how do we perform with maps in the spaces in which we also perform our daily tasks? And how can we use the map to interpret how we, historically, performed in these same spaces (Del Casino Jr, Del Casino Jr, and Hanna 2005)? Or as Cosgrove and Daniels asked, "how can we make maps 'speak' about the social worlds of the past?" (Cosgrove and Daniels 1988). We perform with maps every time we turn on our smartphones's GPS capability and see Google's blue beacon that represents our physical presence in the location in which we are standing in the landscape and within the map.

In the first decade of the 21st century, cartography has slipped from the control of the government and commercial map houses to the collection and configuration of spatial data by anyone with a home computer and an internet connection. Mapmaking, or the way of knowing the world, is operating from the ground up (Crampton, Krygier 2005). As Mark Monmonier explains in, *How to Lie with Maps*, the orientation of maps show north as up, because of the orientation of the dominant societies in the northern hemisphere. Today we can say the same about digital maps. They are oriented to the exact location of the digital viewer.

GIS technology coupled with interactive geo-visualization interfaces such as Google Maps allow us to disseminate personally inspired geographic information on digital maps. This technology has changed the way we gather, produce, use, obtain and share geographic information (Elwood 2008). The content, characteristics, and purposes

of today's digital maps are as varied and numerous as the individuals and institutions who construct them. This is a result of research within the GIS community in the mid-1990's that was undertaken in order to understand how GIS technologies are socially constructed and how they produce space, knowledge, and power. This led to a GIS culture which enabled more equitable access to digital spatial data, the development of new ways of representing spatial knowledge in digital maps, and the re-designing of GIS software and databases to alter the way in which they represent and analyze spatial data in digital form (Elwood 2006).

Some scholars argue that broad cultural shifts, such as increasing reliance on visual images to produce and communicate information, suggest that GIS must be understood as communicative media, not just as spatial analysis technologies (Elwood 2006). Multimedia GIS strategies, for instance, move beyond the traditional Cartesian representation of spatial knowledge in a GIS by incorporating digital photographs, sound files, sketch maps, or three-dimensional representations (Elwood 2006). This type of media is used in a variety of GIS constructed websites including those intended for historic education or heritage tourism. These capabilities, although based on geospatial technology, spring instead from the potential to locate (on a map) an event or occurrence that one finds important, useful or meaningful.

CHAPTER 6

PUBLIC HISTORY AS DIGITAL HISTORY

Public History

Public History is "concerned with how we acquire our sense of the past - through memory and landscape, archives and archaeology," and then make it accessible by presenting it to a range of audiences - through museums and heritage sites, film, historical fiction and websites (Liddington 2002). Public history became the purview of the non-academic beginning in the late 1960's and early 1970's when out-of-work history majors found other ways to put their history degrees to use. With history, therefore, being researched outside the university setting, new ideas about what was important historically came to the fore. Oral historian, Ronald Grele, says the task of the public historian is to help members of the public uncover and appreciate their own history and to aid them in understanding their role in shaping the past (Grele 1981). The retelling of history became a collaborative effort between those with expertise and those who lived the history.

Public stories of the past imbue historic locations with meaning by acknowledging the full array of social forces that contributed over time to the uniqueness of their location (Hurley 2010). Public history "has the ability to anchor people in the flow of time and expose relationships between past and present" (Hurley 2010) because "historians can couple the intricate relationship between cultural landscape history and place-specific memory" (Hayden 1995). For example, "Histories of the National Mall" is a website and mobile exhibit accessed by computers or mobile devices designed by

George Mason University's Roy Rosenzweig Center for History and New Media. This place-based public history exhibit allows visitors to access the National Mall's history while on the Mall itself. The Mall is a designed landscape that honors the values of the United States, but its current stately appearance was transformed piecemeal throughout our nation's history from a muddy floodplain used by local residents for vegetable gardens, cattle grazing, and slave quarters to the dignified promenade, lined with museums and monuments, that it is today. The "Histories of the National Mall" mobile exhibit interprets this history using historic maps, chronological accounts, topic-centered stories and biographies created with the most recent public history scholarship.[19]

Utilizing the built environment "as the primary vehicle for communicating the past" (Hurley 2010) is becoming common practice among public historians. In the past, public history was devoted to the celebration of the achievements of those who were predominantly elite, white, and male. The power of ordinary urban landscapes to nurture citizens' public memory had largely remained untapped for most working people's neighborhoods in American cities, and for ethnic and women's history as well, before the 1990's (Hayden 1995). Today, public history focuses on the accomplishments of *all* residents and their activities within their environment. It is said of W.G. Hoskins and his 1955 publication of *The Making of the English Landscape*, that he rescued local history from its narrow focus on famous individuals and monument-inspiring events because he believed that behind every hedge, shed or flower garden was an interesting individual personality (Jackson 1979).

Marwyn Samuels affirms Hoskin's position when he asserts that, "We need to recognize the individual who created the landscape [because] we cannot understand the

[19] http://ncph.org/history-at-work/award-histories-of-the-national-mall/

landscape without the context within which it was shaped" (Samuels 1979). Landscapes are storehouses for social memories, because natural features such as hills or harbors, as well as streets, buildings, and patterns of settlement, frame the lives of many people and often outlast many lifetimes, (Hayden 1995). We can see this in Darien. When landscape elements disappear, collective memories can be obliterated if they are not interpreted.

Figs. 39a & 39b Tabby Ruins, Carnochan
Sugar Mill and Rum Distillery Ruins, McIntosh County, Georgia. Photos by author.

The remnants of the early nineteenth century tabby-constructed Carnochan sugar mill and rum distillery in McIntosh County are being subsumed by an upscale residential

subdivision. Partially destroyed by a hurricane in 1824, the ruins have weathered almost two hundred years of existence. The developers have noted the ruins on a sign here on Mission Drive and a historical marker for the ruins sits at the intersection of Route 99 and Tolomato Causeway the road leading to the ruins off Route 99.

The tragedies and the celebrations of these places, once active buildings and sites, are usually marked by historical markers like those of the Carnochan ruins, but today their stories are increasingly being told in digital form by digital historians where it can be preserved as long as there is an internet and a domain name with which to identify it. The beauty of digital historical accounts is that as new information is researched and uncovered by scholars, it can be easily updated on a website where it can remain current as opposed to books, which require the printing of new editions.

Delores Hayden was in the forefront of the movement to propel the conversation on how historians could explore a landscape's "physical shapes along with their social and political meanings." These collaborations took place with residents, planners, preservationists, local artists and business persons (Hayden 1995). Her book, *The Power of Place: Urban Landscapes as Public History*, explores the, until then, untold histories of women and minorities in urban Los Angeles. Through her work she connected the citizen's everyday lives to the Los Angeles landscape as it changed over time and illuminated how tapping the power of landscape can be used to ignite public memory.

Public history, then, is not only about the people who lived in the past. It involves today's citizens who can actively map their memories of the past or their impressions of their surroundings. A historic location is not just a piece of property or a jurisdiction, states Matthews. The task is to discover how the property is meaningful for community

members because the interpretation of the site will represent the community, not just to others, but to the community itself. The heritage of the community can be defined as the way in which the past provides a sense of belonging in the present (Matthews 2006).

Software such as Google Earth and Open Street Map have democratized map-making so that every individual can be both a user and a producer and user of digital maps (Warnaby 2012). In "Disembodied Voices, Embodied Places: Mobile Technology, Enabling Discourse and Interpreting Place," Boone writes about how the African American community in Raleigh, North Carolina has used their smartphones to map "self-authored digital videos" that record their memories of the people and events that occur now and occurred in the past in John Chavis Memorial Park. Through cellphone diaries, community members have catalogued previously undocumented memories and perceptions of the meaning of the park (Boone 2015).

When citizens participate in mapping their communities through participatory GIS, the maps become, says Harvey, "common ground in a network of socio-spatial relations informed by a myriad number of discourses and practices" (Harvey 2001; Del Casino, Jr. and Hanna 2006). "Maps that people simultaneously make and use, mediate their experiences of space" (Del Casino Jr. and Hanna 2006). As people walk, drive, touch, smell, gaze, using their bodies and senses to formulate understandings of the landscapes they inhabit, they *create* information about the landscape that mediates their experience of its map and reflexively changes the experience of the landscape as well (Del Casino Jr. and Hanna 2006). Map making is experiential. Del Casino quotes Perkins declaring that, "mapping becomes a social activity" (Del Casino Jr. and Hanna 2006).

A challenge communities face in interpreting their landscape history is in deciphering their community's local, regional or global needs. (Lozny 2006) In Eastern Europe, Lozny explains, people wanted to eliminate the physical memory of the communist past. In this country, we often avoid depicting memories of slavery or lynchings that persisted during the Jim Crow era. His solution is to discover what matters to people now and mattered to people in the past by creating "a specific methodology that would allow for identification and examination of various cultural changes and their meanings introduced by people to the same place, but at different times" throughout history (Lozny 2006). President Reagan in his farewell address as president in 1989 warned the American public, "If we forget what we did, we won't know who we are. Let's start with…more attention to American history and a greater emphasis of civic ritual."[20]

History can reveal these forgotten and contested stories of any ethnic or gender minority, yet, on the other hand, history can have a unifying effect on less diverse citizenry. It can bolster community pride and inspire a sense of stewardship (Hurley 2010). The Chippewa's of Georgina Island, through Ontario, Canada's Cultural Mapping Resource Initiative, focused on collecting stories of the "core identities" (Jeannotte 2015) of the citizens. The website that resulted from this program shares stories about the Georgina Island First Nation's community. "Our proud heritage is a living tribute to our ancestors and Chippewa people," the website states.[21]

It is necessary to involve different elements of the community directly in the process of research, interpretation and dissemination. Grassroots history should open a

[20] http://millercenter.org/president/reagan/speeches/speech-3418
[21] http://georginaisland.com/

space for people to tell stories from their own point of view, organize research around themes that speak directly to contemporary challenges, cover broad chronological periods and resonate with diverse elements of the local pop: race relations, business development, artistic innovation, environmental change, transportation, park development, political organization public safety….explore the ways that built space conditioned social relationships over time and how building occupants continuously modified the built landscape to achieve particular social objectives (Hurley 2010).

The beauty of spatial histories is that they can shatter the "truths" we hold about the past to reveal histories that were hidden because the past was written by the people who described it and recorded it (not necessarily by those who lived it), from a perspective that was colored by their beliefs and prejudices. Because the land holds memories in the patterns created by those who lived on it, and because data is attached to those patterns, a spatial history can uncover the truth that is etched in the land and carried in the data. Analyzing patterns seen in maps can help recreate the past and "reconfigure power relationships" (Wilson 2015). These contested histories of marginalized groups bring awareness to the fact that history can be rewritten to include all stories like those of African American enslavement and emancipation[22], Japanese internment camps[23], or gay rights[24] and these can create new narratives with which to attract visitors to any site that rewrites its history to be more inclusive.

[22] http://dsl.richmond.edu/emancipation/
[23] http://www.digitalhistory.uh.edu/active_learning/explorations/japanese_internment/internment_menu.cfm
[24] http://wearinggayhistory.com/

Digital History

All history occurs in a place thus it can be mapped. The map is a medium through which its maker, its user, and the landscape form a relationship. In the past decade, an enormous amount of the analog historical record has already been converted into a digital format, which enables access to it by anyone with a computer and an internet connection. For example, the Library of Congress's American Memory[25] project contains more than nine million historical documents for use in research. Because of this, governments, academics, non-profits and private firms are able to collaborate to produce maps that promote place and uncover hidden histories.

A spatial history takes digitized content combined with a digital map to create a framework for people to experience a story about a major or minor historical event, person, custom, etc. With GIS technology, an almost endless number of layers can be depicted on a map accompanied by images, video, and text. And when we view our maps on our handheld devices, they allow us to immerse ourselves not only in the place being mapped, but the time that is mapped through the stories being told within the mobile application. Spatial history maps create a vision of the past similar to the way the colonial maps, discussed earlier, created a vision of the future. Each is used to communicate their particular viewpoint. A digital history, whether viewed on a website in the comfort of your own home or viewed at a historic location while using your smart device becomes "a museum that offers virtual content."

Because of this digitization of the public record, the history of public landscapes available on websites and within apps (applications) on mobile devices has exploded as more and more software has been developed to enable those without extensive computer

[25] http://www.memory.loc.gov/ammem/about/about.html

skills to generate digital maps and the stories located within them. These sites and apps compile research using a seemingly boundless array of documents such as, diaries, letters, newspaper articles, court records, census manuscripts, city directories, birth registries, war records, marriage certificates, tax assessment rolls, fire-insurance atlases, building permits, and oral histories which are shaped into virtual exhibits. Instead of standing on a street reading a historical marker, we are now able to use our smartphones or data-enabled tablets to not only read, but see pictures, hear accounts and watch videos of the location we have come to visit. We can more fully appreciate the history of New York City, for example, with the iconic photo of construction workers sitting on a beam during the construction of the RCA building in 1932 or through survivor interviews of the twin towers collapse on September 11th, 2001.

In addition, the locative properties of smartphones change the way we navigate physical and social spaces, allowing us to find people or places of interest that are in our vicinity. The phone's Global Positioning System (GPS) enables our phones to help us explore the landscape because our phones contain mapping applications that stream a satellite street map onto the screen and pinpoint our location within it such as the blue beacon Google uses to show us where we are both on a street and on the map. To be more specific, software within our smartphones correlates the GPS coordinates of the phone (calculated from satellites) with a geographical map, the features of which have been referenced to the same spatial coordinate system (Chris Speed 2012). When we look at the map, we noticed we are placed within it. We have become part of the map and can perform with the map. We are creating history as we interact within the

landscape and within our map application as well. We can even document the record of our footsteps or path of travel with specific GPS software.

Complementing the locative technology and streamed maps is the ability of our smartphones to receive digital images. The physical reality of our space can be augmented by additional images, whereby specific smartphone applications can supplement physical space with information that exists in virtual space. While looking at the physical space through the lens of the smart phone camera, the view appearing on the phone's screen can be supplemented by digital graphics that appear simultaneously with the view of the physical space within which one is standing (Speed (Roberts 2012). For instance, when playing the game Pokemon Go, users see (and attempt to catch, by throwing a Pokeball) various Pokemon that appear to "exist" within the user's landscape. Another feature of Pokemon Go is to locate numerous Pokestops or Pokegyms[26] on the GPS-enabled map on the smartphone screen. These Pokestops and Pokegyms are referenced to specific locations within the city such as the gargoyles on the building at the corner of Clayton Street and Wall Streets in downtown Athens, Georgia or at the fountain on the University of Georgia's North Campus.

Tourist services, museums, and now even municipalities, supporting their visitors' desire to learn the history of a location, offer walking tours that no longer have to be guided by tour guides or head phones and a recording device, but through virtual tours that can be accessed through one's smart phone. The ability to explore history while standing in a live location allows map users to perform with the map not only in a spatial fashion, but in a temporal fashion. This creates a greater understanding of the past as

[26] A virtual location aligned with a real-world location of some significance, like the fountain at Herty Field on the University of Georgia Campus, where one can collect items for use in playing Pokemon Go or battle for control of the Pokegym that the game virtually locates at this specific geographic location.

users discover historic buildings, learn who lived in them, and what events happened there through features in the tour application. GuidoGo is a guided walking tour app using Google Glass. Their tag line is, "Every place has a story to tell." Their mission "is to inspire people to connect with art and culture through a compelling mobile storytelling experience. Glass brings us closer to that vision, and by partnering with museums and cultural institutions this becomes accessible to everyone."[27]

There are many approaches to constructing spatial histories. University digital history departments are engaged in many of these endeavors. There are private companies such as OnCell[28] or free-ware such as Timemap[29] through which you can publish your location-based content on the web and in mobile apps. Many communities are constructing their own map-based digital histories and government GIS departments have this capability as well with their access to ESRI's Story Maps.[30]

Spatial Histories on the World Wide Web

There are typically five steps necessary for creating a spatial history website or mobile app that are outlined by Professor Caterina Balletti in her paper that discusses the creation of the Visualizing Venice website. Visualizing Venice is an excellent example of what academicians, their students and professional architects have done in creating a

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[27] (https://developers.google.com/glass/distribute/glass-at-work)

[28] OnCell's mobile communication experts design cutting-edge mobile tour applications to parks, campuses, historic sites or anyone who seeks to offer immersive experiences to their visitors via smartphones and tablets.

[29] Timemap.js is a Javascript library to help us use online maps, including Google, OpenLayers, and Bing, with a SIMILE timeline. The library allows you to load one or more datasets in JSON, KML, or GeoRSS onto both a map and a timeline simultaneously.

[30] ESRI (Environmental Systems Research Institute is an international supplier of geographic information system software, web GIS and geodatabase management applications. Esri Story Maps let you combine authoritative maps with narrative text, images, and multimedia content. They make it easy to harness the power of maps and geography to tell your story.

digital account of the historic city of Venice, Italy. As part of the initiative, three-dimensional digital models of buildings using historic maps of the city of Venice were generated in order to understand the city as an on-going process of change over time and to "communicate new knowledge about place and space to the public through portable devices and on the Visualizing Venice website."[31]

Professor Balletti, describes how the team of students, historians, and architects use database archiving linked to geographic information systems to "georeference historical data, model key phases of urban development on base maps, and produce renderings and pertinent multimedia materials to interpret the development of the city of Venice, Italy with database-driven visualization technologies" (Balletti and Guerra 2016). Balletti discusses the historic Arsenale of Venice, the prominent ship-building site in Italy beginning in the twelfth century, which was used until the early twentieth century. The research undertaken on the Venice Arsenale was completed using the following steps:

> 1. Collected archival materials needed to study and analyze the entire complex (maps, surveys, iconography, photographs, and texts)
> 2. Created a database where the above research could be digitized and catalogued
> 3. Managed the layers of data that had been collected in the historical geographic information system (HGIS)
> 4. Represented major phases in the Arsenale's history through models which summarize the analysis and interpretation of the data.
> 5. Identified and defined the methods of digital communication best suited to different user categories, (film or video footage for fixed interactive stations, apps for mobile devices). (Balletti and Guerra 2016)

[31] http://www.visualizingvenice.org/visu/?page_id=14

Balletti's group added the additional task of digitally creating three dimensional models of the historic buildings to give relief to the historic map as seen in the image below. The intent of the curation and digital re-creation of the city of Venice is "not to conserve

Fig. 40 Visualizing Venice models
Collaboration between Duke University, Università Degli Studi di Padova, Università Iauv di Venezia**.**
http://www.visualizingvenice.org/visu/?p=98

works, but rather to communicate the complex's [Venice Arsenale's] history." The result will not be a virtual museum about the location's history, but a virtual history that can be viewed on site on a mobile device so that visitors can experience the virtually depicted layers of history while standing in the actual location (Ferrighi 2012).

Another early spatial history project was Virtual Jamestown. At first, the website, conceived in 1997 by Crandall Shifflett, then professor of history at Virginia Tech, (now professor emeritus), was intended as a repository or thematic research archive that aggregated historical documents from Jamestown's history that other scholars needed for their own research. Shifflett's initial intention for the website was to "provide access to every written record, artifact, plan or drawing about Jamestown's people, meaning and legacy." One intention for the site was to use techniques of virtual reality to digitally

reconstruct lost landscapes (similar to those constructed in Visualizing Venice) and to set early Virginia history in the context of its origination as part of the Atlantic World instead of simply its colonial beginnings.

One of the most important documents used on the site was John Smith's well-studied 1608 (published in 1612) map of Virginia. Shifflett geo-rectified Smith's map with a modern satellite map, locating the Indian settlements and villages in accordance with our current geographic coordinate system. One thing that became evident once the map was completed was how precise Smith's surveying had been. Another piece of information noted was how Indian settlements were located on fresh water rivers away from the unhealthy damp, mosquito-ridden salt-water areas close to the ocean where Jamestown was located which may have resulted in unnecessary deaths.

Despite the fact that knowledge of the Algonquian-speaking Native Americans is limited, archaeologists and ethnographers provided enough information from excavations and historical research to create a digital visualization of American Indian life in Chesapeake Virginia. This visualization is important, writes Shifflett, because it provides a view of Native American life that is not as biased as accounts written by Europeans. It provides a three-dimensional view into seventeenth century landscape patterns and uses before colonizers reconfigured the fields, forests and swamps for their own uses.

Three dimensional digital visualizations are a helpful substitute for or accompaniment to text when conveying detailed descriptions of a physical location. In the e-book, *Writing History in the Digital Age*, John Theibault uses the adage, "A picture is worth a thousand words" to explain how an image can be a substitute for and adjunct to written descriptions, narratives or analysis.

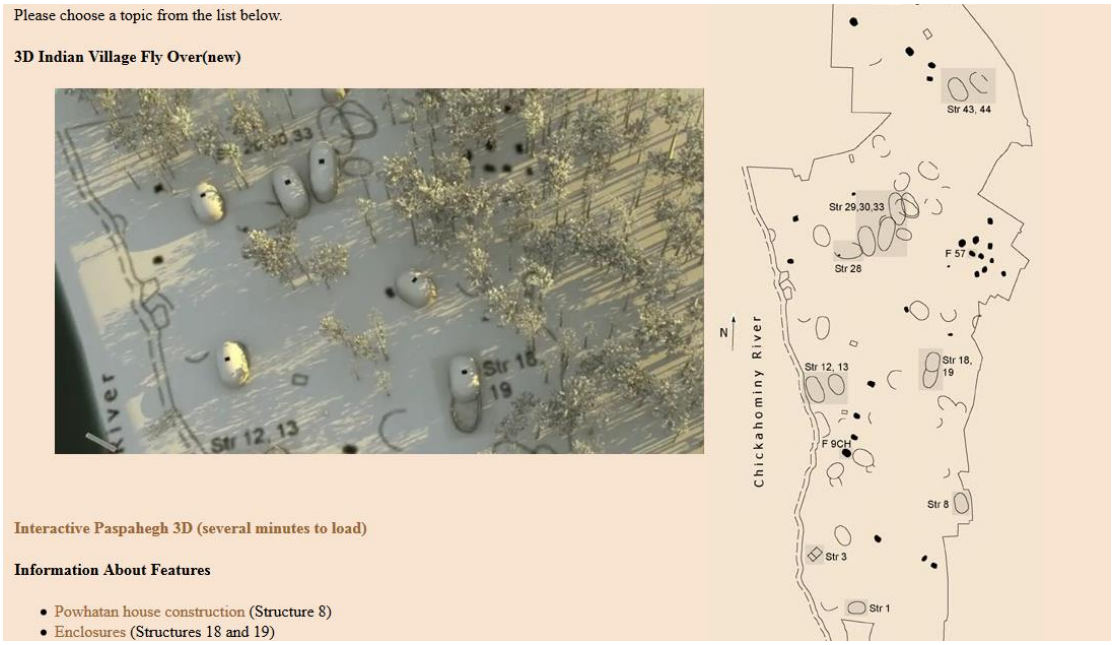

Fig. 41 Indian Village 3-D Digital Visualization
http://www.virtualjamestown.org/paspahegh/examine.html
Screenshot used with permission of Crandall Shifflett

Elena Svalduz writes, "without questioning the value and usefulness of direct experience, there is no doubt that today's technological revolution opens new horizons for displaying historical content, giving us multimedia tools that make it possible for a wider, more diversified audience to see (and to interpret) research findings." (Svalduz 2012).

Another early, yet excellent, example of a spatial history was the Digital Harlem project called *Black Metropolis: Harlem, 1915-1930,* which depicts how the daily patterns of life of ordinary African Americans living in New York's black mecca during the "Roaring 1920's, can be recreated with digital technologies. The project, launched in 2009, was first conceived in 2002, before humanities researchers used GIS to aggregate their data. The use of GIS linked to Google Maps (which became available the year

before the data was compiled in 2005) was employed. Because much of this project used crime statistics, they were easily mapped, thus, the spatial relationships between events within this precisely defined geographical area became evident. Users can search the site's database and dynamically create maps based upon their particular interests (Tiedje 2009).

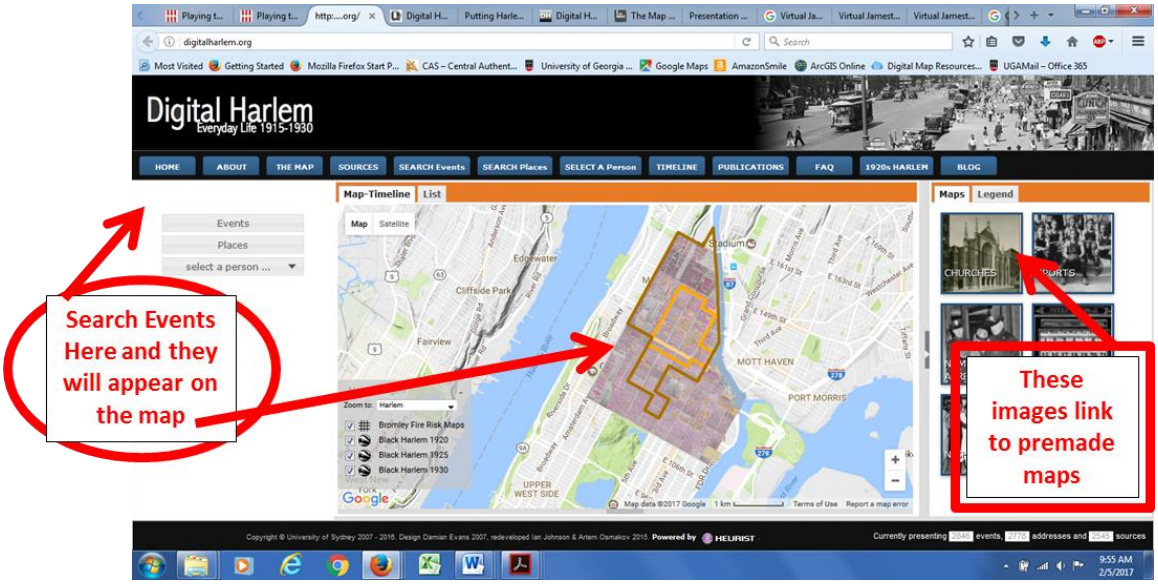

Fig. 42 Digital Harlem screenshot. www.digitalharlem.org
Courtesy of Ian Johnson and Stephen Robertson at Heurist, a user-configurable online database application developed for humanities scholars

Digital Harlem was a collaborative research project produced by four members of the University of Sydney's Department of History. Member Stephen Robertson writes that most historical scholarship of the time didn't address precise locations like building addresses nor did they note how one location related to other locations. What the Digital Harlem creators did is take all the information from the newspapers they used, which included news reports, society column information, sports reports, and advertisements and associated them with each address. Being able to map this data, creates a connection to the content beyond what one would normally feel when reading traditional text

documents, asserted several reviewers. The probation files that were used, explains Robertson, create an intricate web of activity for each individual because the data can map information like travel to work and changes in residence. For example, one man on probation moved several times for different reasons: in order to obtain extra rooms to lease to others, to obtain an easier place for his sick wife to maintain, or because he could not pay the rent. These distinctive details of Harlem's vernacular culture interpret the troubles and triumphs of ordinary citizens to which most people can easily relate.

Another unique aspect of Harlem's culture that is interpreted on the website is the ability to map arrests for playing the numbers game, a form of illegal gambling that was one of America's black-owned businesses, turning over tens of millions of dollars every year. The most successful "bankers" were known as Black Kings and Queens whose wealth eventually attracted organized crime members such as Dutch Schultz and Lucky Luciano who after prohibition ended, needed another source of "income" to maintain their status as New York City crime bosses.

Soapbox speeches were also part of the street scene in Harlem where crowds would listen and discuss issues important to the day from topics on local strikes to rent control to the theory of evolution. Accounts of these were taken from local newspapers or arrest records. Statistics could include the size of the crowd or the reason for arrest. This description from the District Attorney's case file that is captured in a text bubble and located on the map clearly provides a discreet, yet illuminating image of the details of life in Harlem's vibrant historical spaces in the 1920's:

> "**Description:** 'It was a clear night and there were a lot of colored speakers on the street. You know, they were making speeches.' In the crowd was Walter Hall, who met James Scott, a con man, who took him to see a 'Hindoo' spiritualist on 125th Street, and then to meet Walter Hall, his partner, to set up a con.

The panel on the left of the webpage, allows you to search for events and places, and generate interactive web maps based on the search results. You can also or select from a list of people, and generate maps of locations where they spent time in Harlem. Multiple layers of results can be displayed on the same map, and each can be toggled on and off.

In 2010, Digital Harlem won both the AHA Roy Rosenzweig Fellowship for Innovation in Digital History and the ALA ABS-CLIO Online History Award. Winning the awards is a testament to the flagship website's ability to make innovative use of the then emerging technologies, use them to represent the history of a cultural neighborhood in a deeper manner and engage the user by enabling them to query their own specific research interests. It has been said that the site itself does not offer interpretations; it is a research tool for exploring 1920s Harlem, however, the user becomes the curator of the information on the Digital Harlem website, interpreting the history available based on his or her curiosity or interests. Digital Harlem blog contains a more detailed guide to how to use the site, as well as updates and news about the project.

Many institutions collaborate and often share software publicly. One such software product is Neatline. The Scholars' Lab at the University of Virginia Libraries created Neatline, an open-source geo-temporal visualization tool which is a plugin for the popular collections exhibit software Omeka,[32] developed by the Center for History and New Media at George Mason University. Neatline gives users the opportunity to tell

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[32] Omeka is a free, open source web-publishing platform for the display of library, museum, archives, and scholarly collections and exhibitions, designed with non-IT specialists in mind, allowing users to focus on content and interpretation rather than programming. Omeka is a project of the Roy Rosenzweig Center for History and New Media, George Mason University. Copyright © 2007–2017 CHNM.

stories through historic maps, timelines, and short text pieces. What has interested Bethany Nowviskie, director of the Scholar's Lab, the most, has been drilling deeply into the history of individual artifacts or documents encountered at a specific time and place in order to curate its story for the website (Fischer 2012).

One example of a website that uses Omeka and Neatline is a mapping project of the Whiskey Rebellion complete with audio-driving tour. The drive covers 38 miles between the Sign of the Green Tree tavern in Pittsburgh to Parkinson's Ferry in Monongahela City. Stephanie Krom, the site's creator, describes it as a "user-focused digital space" which was created by combining historical research and ground-truthing to verify the location of events that took place during the Rebellion so they could be accurately mapped on the website and driving tour.

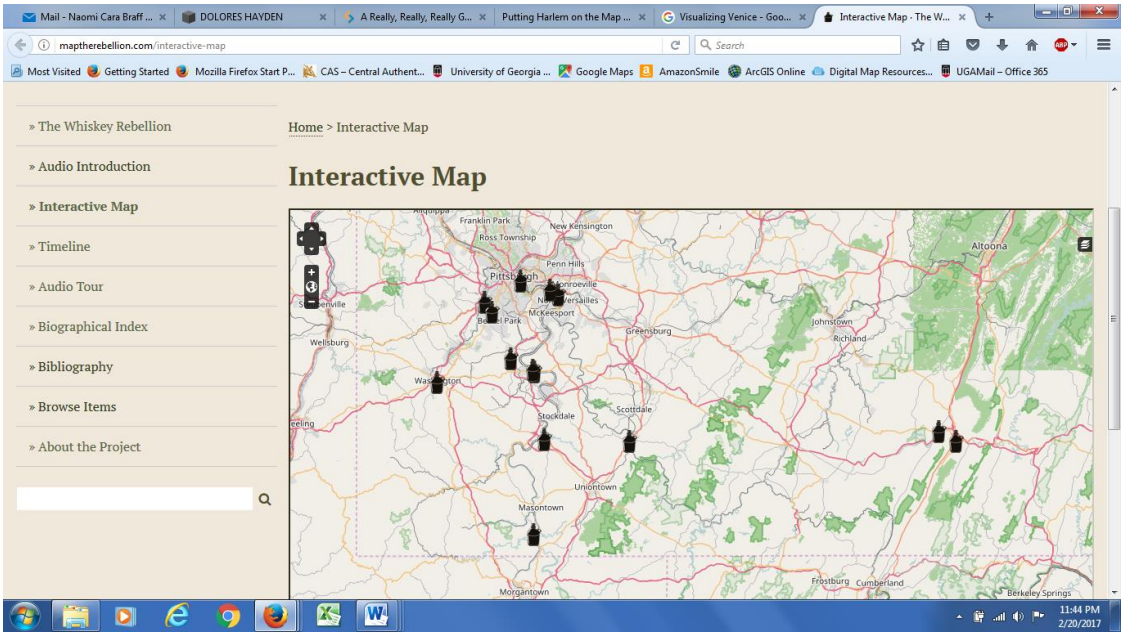

Fig. 43 Whiskey Rebellion Screenshot
http://maptherebellion.com/audio-tour
Courtesy of Stephanie Krom,

What is distinctive about yet another project, the Cleveland Historical website and app,[33] said Mark Tebeau in 2012 when he developed Curatescape at Cleveland State University, "is…that the storytelling for this project is coming from the community" (Trubek 2012). College students, high school teachers and their students and community organizations collaborated to add stories to the website and mobile app that takes advantage of a smart phone's GPS capabilities to guide the user through historic Cleveland neighborhoods via text, photos, audio and video. Tebeau and the others behind the app have lent their model to other cities through its Curatescape mobile platform. Baltimore, Spokane, the District of Columbia, New Orleans as well as states and regions are some of those who have employed this software. Armstrong State University in Georgia is creating the Savannah Historical website and app, which at the time of this writing, offered seven tours and fifty-nine stories of the city.

Museums and nonprofits have been utilizing this technology as well. The Museum of London is using the Street Museum app, created in 2010 by Brothers + Sisters, a London-based creative agency, to bring its extensive historic art and photograph collections to the streets of London by inviting London citizens and visitors to use their smart phones to view augmented reality images of historic London over-laid on the street view seen through their smart phone's camera screen (similar to the way Pokemon Go users see augmented reality images of Pokemon.) The historic photographs, paintings and drawings of various London streets are "lent" to tourists via their smart phone so they can get a glimpse of what, for example, Covent Garden looked like at the turn of the twentieth century.

[33] Developed by the Center for Public History + Digital Humanities at Cleveland State University

Fig. 44 Street Museum. Street scene at Covent Garden with underground station and horse and cart in the background, was photographed by George Davison Reid. Permission © Museum of London

The app, which has won twelve awards over a three-year period, works as city-wide mobile marketing for the Museum of London, which entices a new mobiley-agile audience to continue the journey at the museum's galleries. According to Brothers + Sisters' Behance[34] page, the Museum only wanted 5,000 downloads, but the app had generated over 350,000 downloads. The app was iTunes featured new app and reached number 19 in the top free apps and number two in the top free lifestyle apps. Due to the app's popularity, the museum achieved its main goal, visitation to the museum tripled.

There are many opportunities to use technology such as this in any historic location and McIntosh County is no exception with many documents and images housed in the state's many archives. The next chapter will provide an example of how this was accomplished by interpreting the historic coastal landscape of McIntosh County, Georgia.

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[34] Adobe's leading online platform where the creative world showcases and discovers creative work and creative talent.

CHAPTER 7

THE COASTAL MCINTOSH SPATIAL HISTORY

To look at a landscape is not always to see the landscape. To see the landscape and the details that may be hidden, partially lost or overlooked requires curiosity, investigation and interpretation. When a potential visitor to the Georgia coast sees the water-filled ditches and dikes on a Google map of Butler's Island, his or her curiosity might be peaked. This curiosity may lead him/her to research the area on the internet, through books and magazine articles or in person. Setting foot on Butler's Island, he/she can read the historical marker that explains the reason for the configuration of this particular landscape. His/her further interest may inspire a quest for a more thorough interpretation of the landscape.

"Historiography is the interpretation of the historical record of human actions and events, and this record's representation as a recognizable narrative" (Deming and Swaffield 2011). Possible sources of the data are the varied recordation of daily life within newspapers, letters, diaries, and images. Because of the digitization and dissemination of historical records via the World Wide Web, the ephemeral and artifactual evidence of McIntosh County's developmental progression can be used to construct a chronological account of this coastal area's environmental history in an interpretive online exhibit.

The history of Darien and McIntosh County, or any location, is the history of the evolution of its landscape, in this case, the Georgia coastal environment. As this thesis explains, the Georgia Experiment sponsored by the Georgia Trustees was promoted to potential settlers in maps and accompanying promotional literature. In the spatial history created to illustrate the concepts presented in this thesis, maps and other ephemerae were used to form a timeline of historic periods to narrate the evolution of land use change on coastal McIntosh County.

Spatial histories like those of Digital Harlem, Virtual Jamestown or Visualizing Venice discussed earlier, that are available to the general public, depict the dynamism of the built environment in a visual format. The interpretation they perform is not simply a summation of events (Svalduz 2013), because the purpose of interpretation is to provoke the viewer "toward a desire to widen his horizon of interests and knowledge" (Tilden 1957) by revealing information in an interesting and novel manner. These spatial stories document the complex ways place emerged from everyday life and help us reimagine communities based on a sense of their distinctive pasts (Tebeau 2013).

The spatial history accompanying this thesis used a configurable application developed by ESRI which enables anyone to make a map without having to know how to write the computer code used for web development (Fu 2015). The app allowed a story to be told using maps and images obtained from the Georgia Archives, the Georgia Historical Society, the Hargrett Rare Book and Manuscript Library, and from private collections to augment the historical narrative by locating it within historic maps, using the geography as a way to organize and present the information.

The screenshots below reveal the history of coastal McIntosh County land use and the impact of new transportation networks in a chronological format. ESRI's Story Map Journal template was used because the scrolling function of this template (similar to that in Microsoft PowerPoint) enables a chronological story to be told by scrolling with a computer mouse wheel through the content on the left side of the computer screen. Scrolling advances the narrative and accompanying images on both the left side and right side of the screen as the story progresses through time.

The first slide shows a map of the area. Several colorful points of interest have been located on the map that correspond with locations in the chronological landscape story. Although the Story Map Journal format does not allow interactive use of map points, which could be used in a walking or driving tour, the points were planned with a tour in mind. Most of the points are associated with existing historical markers.

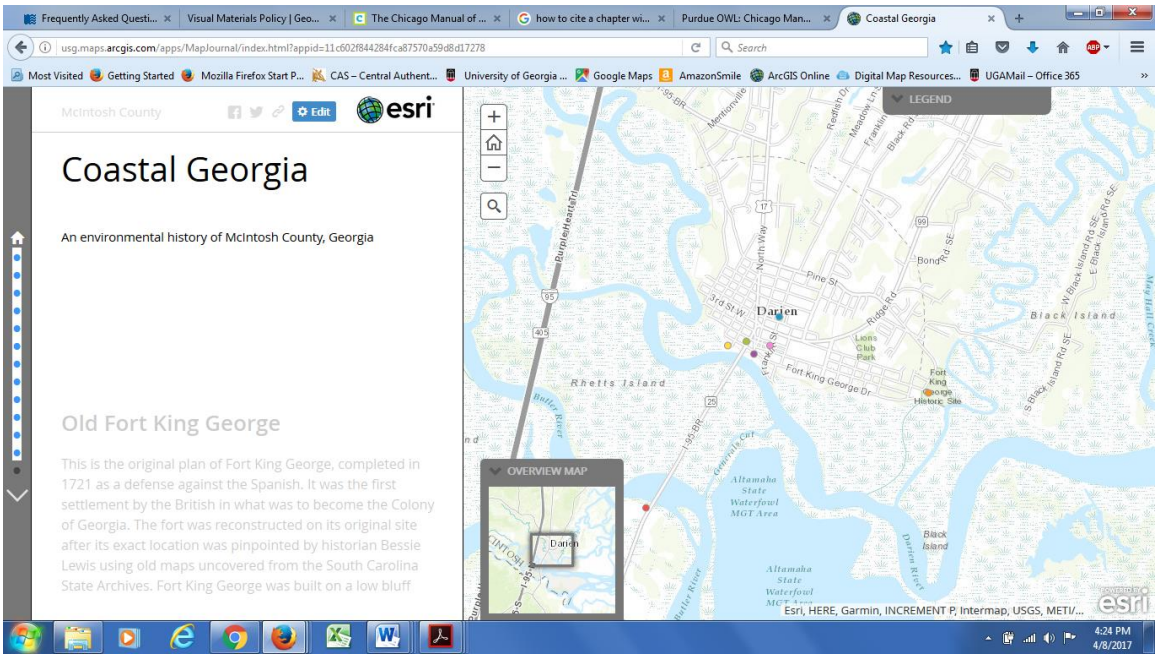

Fig. 45a Screenshot of Coastal McIntosh Environmental History

The points on the above map were created using a Comma Separated Value file that GIS applications read, consisting of the following fields: name of the location, the latitude and longitude coordinates and a brief description of the location as seen in the table below.

Location Name	Latitude	Longitude	Location Description
Old Fort King George	31.21859	-81.24937	Built in 1721 by Col. John Barnwell, of South Carolina, under British Royal orders, the three-floor, cypress blockhouse protected the Inland Waterway.
Vernon Square	31.22092	-81.25973	During the 19th and early 20th centuries Vernon Square was home to prominent merchants and timber barons and the prosperous Bank of Darien.
Butler's Island Plantation	31.21278	-81.26718	Butler's Island was home to a rice plantation made famous in actress Fanny Kemble's *Journal of a Residence on a Georgian Plantation in 1838-1839* for its condemnation of the evils of slavery. It was later purchased for use as a truck farm and dairy farm by former Yankees baseball team owner Colonel Huston. It is now used as a bird sanctuary.
Tabby Ruins	31.36858	-81.43709	The tabby ruins on Darien's waterfront tell the story of prosperous times when tabby warehouses, a local building material made of oyster shells, sand, water and lime, stored cotton and rice for shipment to North and South America and Europe.
Columbus Square	31.22244	-81.25922	In 1895 the Darien & Western Railroad allowed residents of the City of Darien to easily travel beyond its borders by boarding a train at the Columbus Square depot.
Dixie Highway	31.36893	-81.43522	The Dixie Highway was conceived to bring those from colder northern climates south via paved roads for the new automobiles that were being manufactured in the early twentieth century. The highway, bringing tourists from other regions, spurred the construction of restaurants and motels in McIntosh County and other Georgia towns dramatically impacting their culture and economy.

Table 1 Comma Separated Value table

The second slide which appears as the story is advanced, begins with an image of the plan of Fort King George and discusses the construction of the Fort. Built in 1721, the fort was the first structure constructed during the period of English colonization, the point which was chosen as the beginning of this spatial narrative.

Fig. 45b Screenshot of Coastal McIntosh Environmental History

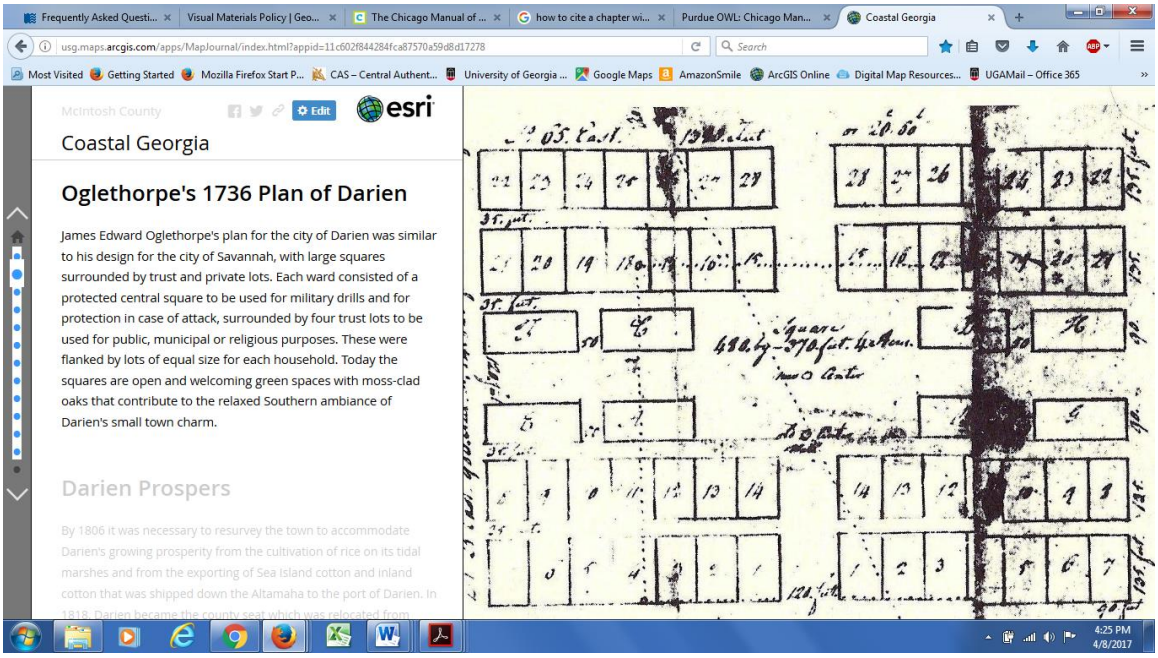

Fig. 45c Screenshot of Coastal McIntosh Environmental History

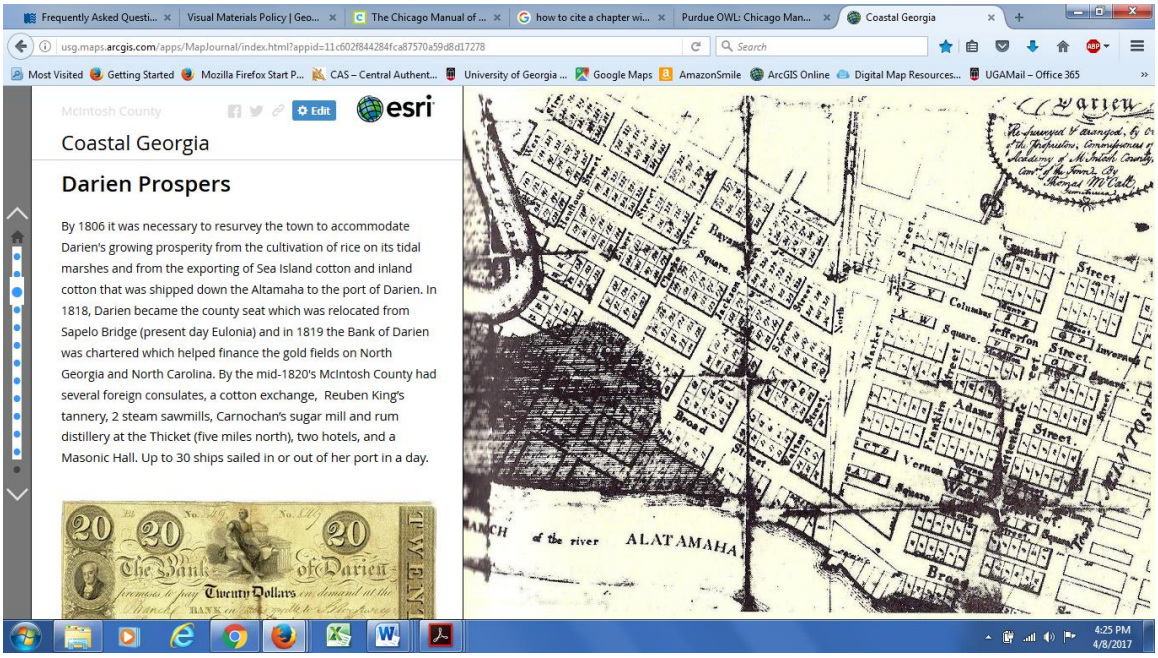

Fig. 45d Screenshot of Coastal McIntosh Environmental History

Succeeding maps show the original and expanded plans for the City of Darien. These maps help tell the story of prosperous times in McIntosh County due to rice production and the shipment of inland cotton that was transported by barges down the Altamaha River for shipment from the Port of Darien to points all over the Atlantic Ocean.

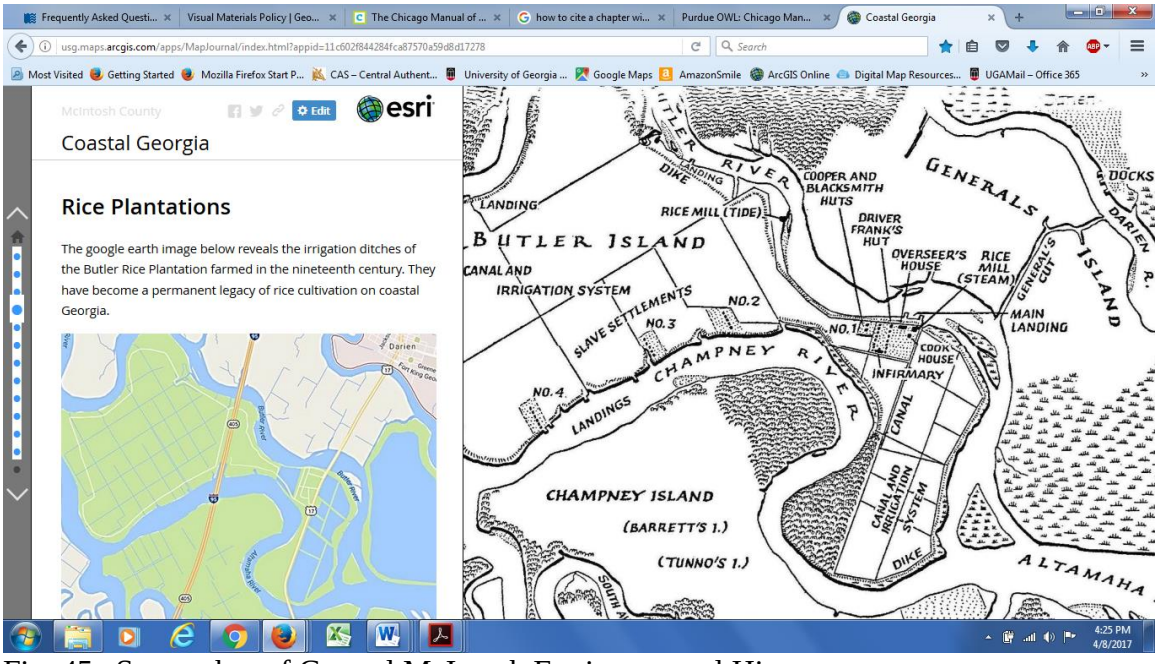

Fig. 45e Screenshot of Coastal McIntosh Environmental History

A current Google map next to a hand-drawn layout of the Butler Plantation rice fields on the previous screenshot confirms the lasting results of slave labor used in antebellum Georgia. This map from the 1961 edition of Fanny Kemble's diary includes a plan view of the layout of her husband, Pierce Butler's, rice plantation on Butler's Island just south of downtown Darien. Both she and her daughter, Francis, wrote accounts of life on the Butler plantation. The map provides geographical context for their differing beliefs about slavery and the later employment of former slaves on the Georgia coast. In the Google map on the left, the irrigation system for the rice plantation is still evident.

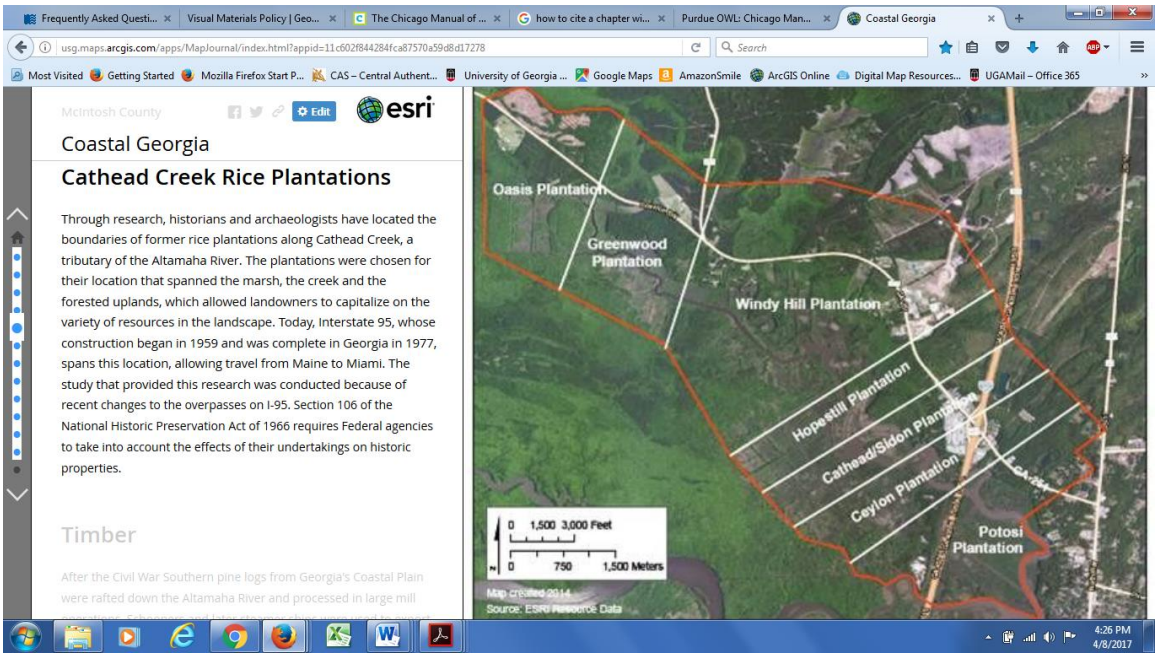

Fig. 45f Screenshot of Coastal McIntosh Environmental History
Location of Rice Plantations, Cathead Creek Historic District
Image used with permission of New South Associates.

Through research, historians and archaeologists have located the boundaries of former rice plantations along Cathead Creek (above), a tributary of the Altamaha River. The plantations span what is now Interstate 95, whose construction began in 1959 and

was complete in Georgia in 1977.[35] This map superimposed on a Google Earth image demonstrates how new technologies such as the automobile, the political climate that sanctioned slavery, our culture's belief systems that turned away from slavery, and even the weather can affect the configuration of settlement and development. The Civil War, crop failures due to weather, and the ubiquity of automobile travel have all served to reconfigure the landscape on this land on the west side of the city of Darien.

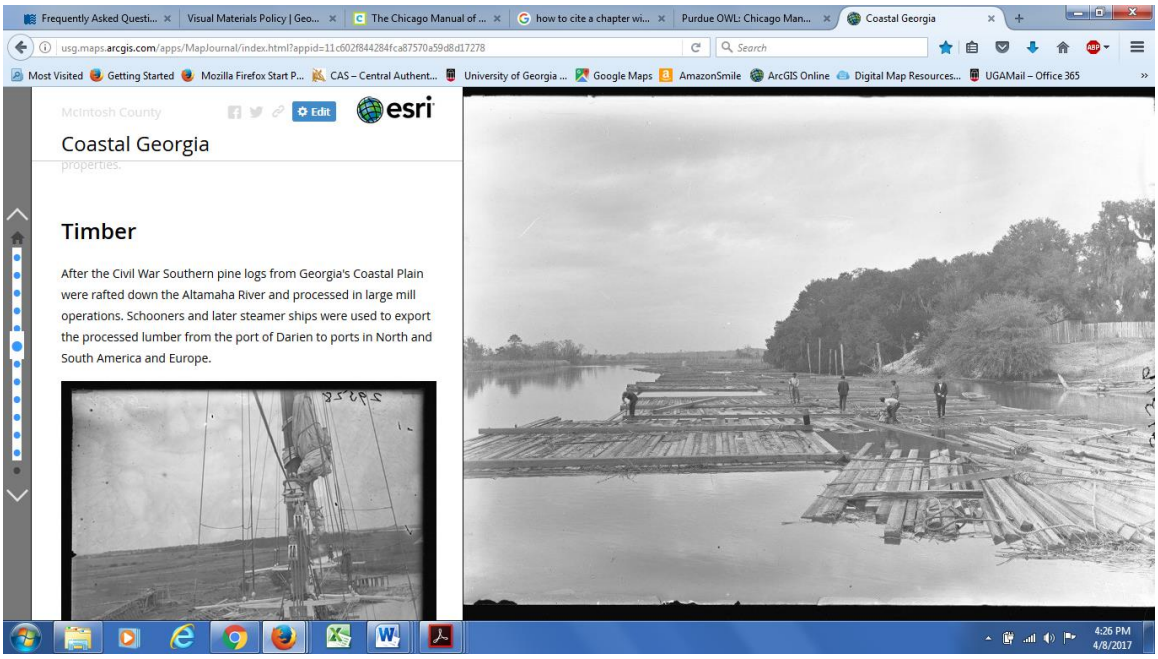

Fig. 45g Screenshot of Coastal McIntosh Environmental History

After the Civil War the timber industry boomed in McIntosh County because the Altamaha River provided the transportation means of conveying logs from the Southeastern Plains and inland Southern Coastal Plains (noted in Griffith et. al. Level III and IV Ecoregions of Georgia) which was extensively forested with pine trees, for shipment overseas and to the Northern states from the Port of Darien.

[35] (http://www.interstate-guide.com/i-095.html)

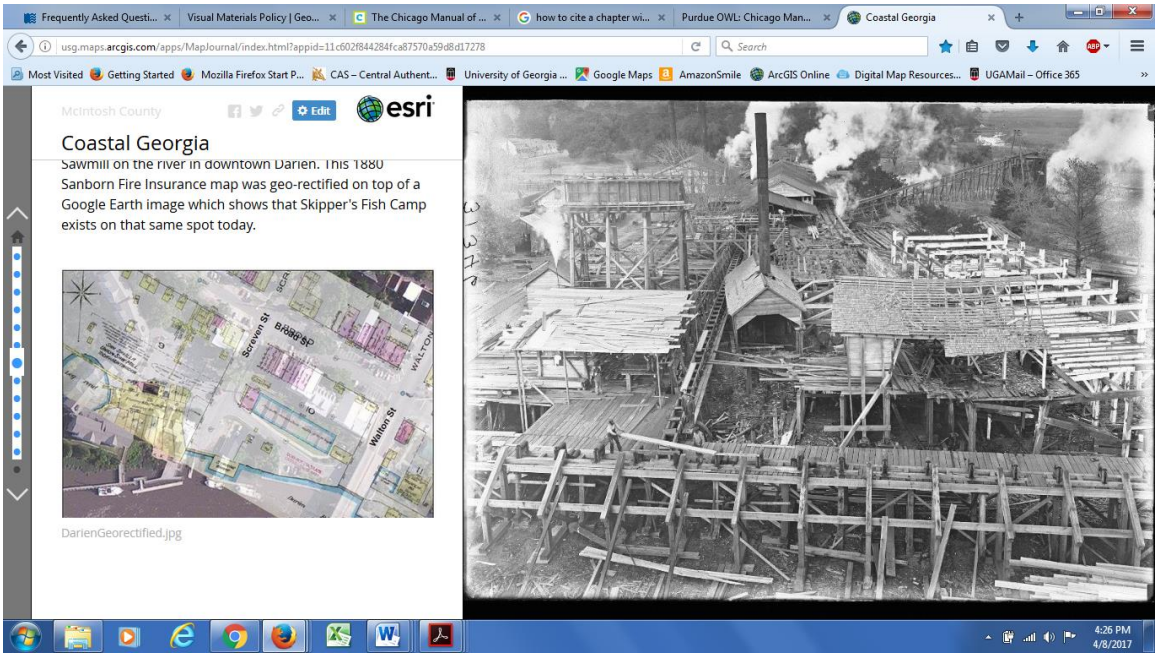

Fig. 45h Screenshot of Coastal McIntosh Environmental History

The Sanborn Fire Insurance Maps, mentioned earlier in this thesis, inventoried a city's resources that would be insured against the hazard of fire. In order to do so, the entire city or town was accurately mapped with regard to building use, type of building materials, and location of water and fire service. These maps are considered by the Library of Congress to most likely be "the single most important record of urban growth and development in the United States during the past one hundred years."[36] Sanborn maps can be overlaid on top of Google maps or cadastral maps as in the screenshot above and the image below. When done so, it becomes evident where buildings that used to exist, no longer do and where new buildings have been built in their places. This layering shows how the landscape is a palimpsest of inhabited locations even when there is no longer any visible evidence.

[36] http://dlg.galileo.usg.edu/sanborn/?Welcome

Fig. 46 Google Earth & Sanborn Map Overlay
Sanborn Map Company. Darien, GA, Apl 1885
University of Georgia Libraries Map Collection, Athens, Ga., presented in the Digital Library of Georgia. Image created by author.

The above image was achieved by laying a transparent version (using Adobe Photoshop) of a Sanborn Fire Insurance map over a Google Earth image. Through this method, the website reveals the economic changes that took place in Darien's downtown during the timber boom roughly between 1870 and 1920. In one generation the industry rose and fell, bringing with it railroad service into the heart of the City of Darien.

The succeeding slides describe the changes in transportation within McIntosh County's landscape. Railroad had a short lifespan within the city because of the invention and mass production of the automobile. Soon the Dixie Highway, later the Quebec-Miami Highway led to the paving of roads and amenities such as hotels and restaurants to accommodate travelers.

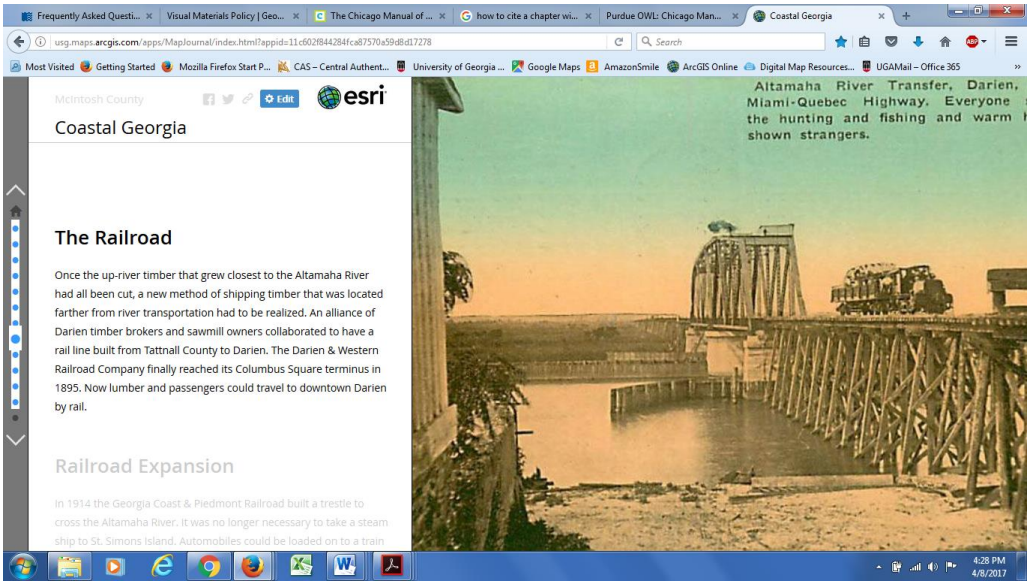

Fig. 47a Screenshot of Coastal McIntosh Environmental History

However, once Interstate 95 was completed, this thoroughfare that enabled high speed travel, siphoned travelers away from the local roads and their accommodations, many of which were located in Eulonia, in the center of McIntosh County. These Eulonia businesses have closed as travelers use the more convenient accommodations at highway exits.

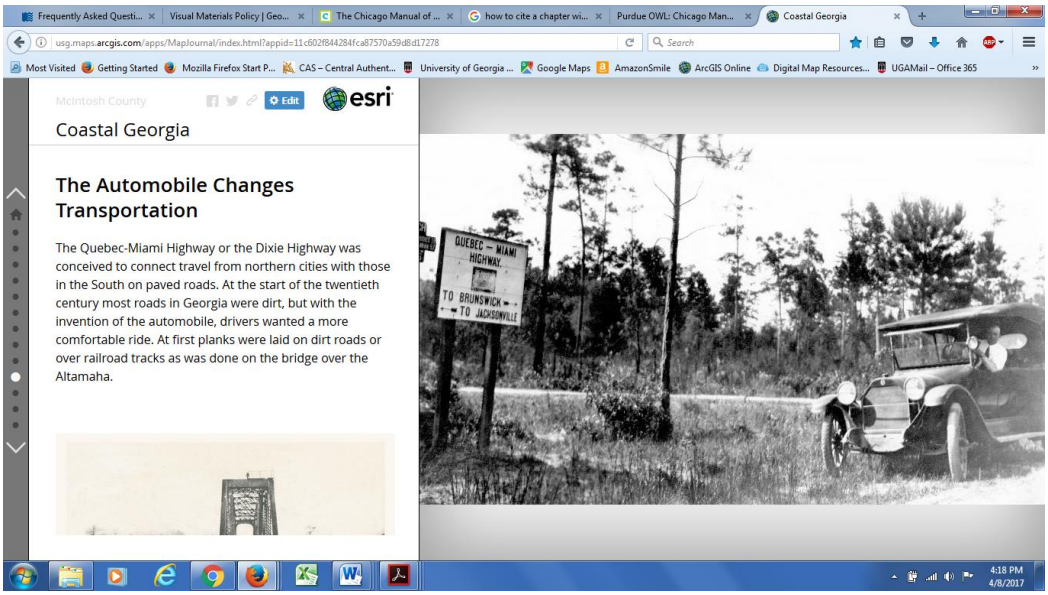

Fig. 47b Screenshot of Coastal McIntosh Environmental History

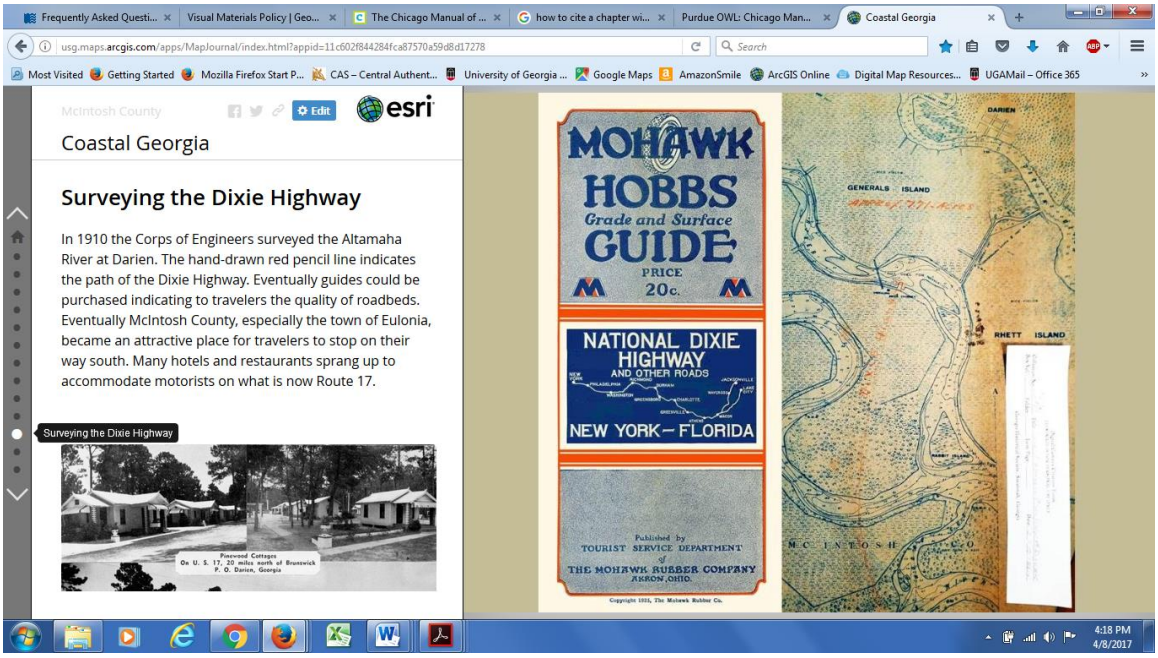

Fig. 47c Screenshot of Coastal McIntosh Environmental History

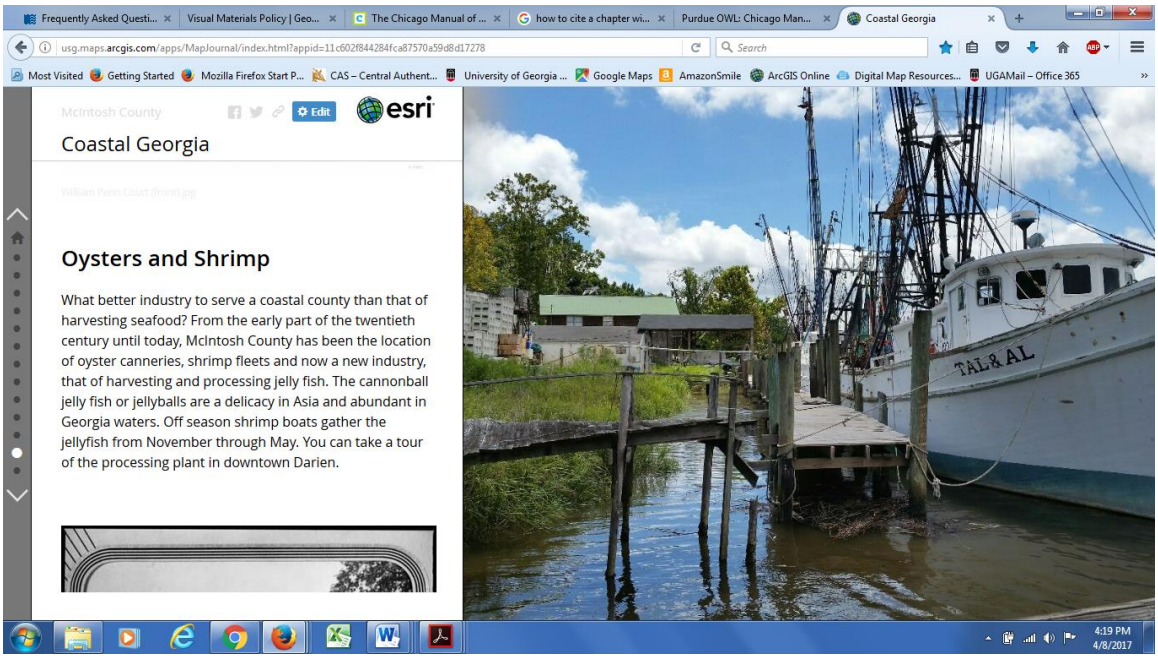

Fig. 47d Screenshot of Coastal McIntosh Environmental History

The above screenshot explains how the seafood industry in McIntosh County, once dominated by the harvesting of oysters, then shrimp is now embarking on the new venture of harvesting and processing jellyfish, a delicacy in Asian countries.

The environmental history of coastal McIntosh County is the story of many different endeavors that altered the landscape and the supply of natural resources. Often these changes are permanent unless efforts are made to restore the landscape to its prior condition such as is being done by the Nature Conservancy in the Cathead Creek Preserve as mentioned earlier or in the restoration of longleaf pine ecosystems as is being done at Wormsloe Plantation near Savannah, Georgia

One purpose of this thesis is to illustrate the importance of telling the story of landscape change in order to cultivate an appreciation in humankind of the beauty and richness of our landscapes so that our actions can be tempered with regard to landscape alteration. Preserving our historical landscapes is also important as it provides continuity to the social and political narrative of our culture's history and reminds us how the remnants of our past are important for telling this story.

In addition, preserving our historical landscapes is important as they serve to attract and maintain an active visitor base that provides for economic development which can further preserve the historic elements of these landscapes. One way to achieve these aims for McIntosh County is through a spatial history of landscape change such as the one discussed in this chapter. Making this available via the World Wide Web and through a mobile app with an interactive map spreads the story and enables visitors (and citizens) and to immerse themselves in the history of the landscape they are visiting.

Ann Lindsay's research into virtual tourism finds that, "An effective web presence is the gateway to heritage tourism for a new generation, cultivating new audiences, new media and expanding existing visitor relationships" (Lindsay 2013).

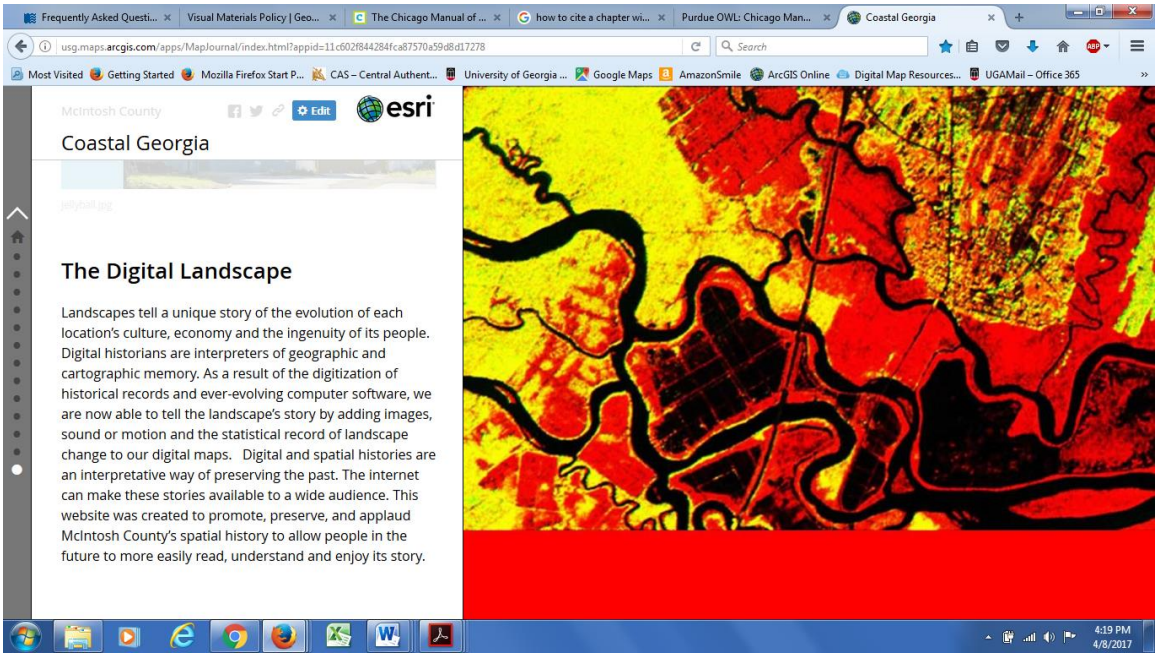

Fig. 47e Screenshot of Coastal McIntosh Environmental History

Lindsay describes the demographics of a certain type of virtual tourist. They are avid armchair or coffee shop tourists, who because of limited funds, don't travel as often as they would like. When they do travel, the locations they visit online are the ones they choose to visit. When donating to charity or buying gifts, they use their money to support nonprofits in the locations with which they have virtual relationships. Because educationally-based, immersive experiences using interactive web content is easily accessible to a wide range of audiences, it has the potential for the greatest impact on virtual tourists. If a travel destination fails to have an impressive website, potential visitors wonder if the physical location will be similarly lackluster. "A well-conceived web experience can…provide a venue for learning, exploration and repeated visitorship" (Lindsay 2013). In fact, a website can be a place for physical visitors to turn a more in depth visit after they return home.

From Trip Advisor's City Maps to the Automobile Club of America, from GeoTourist to GPSmyCity, a Google search of walking tour apps will reveal many choices that allow visitors to large international cities download or design walking tour itineraries for use on their smartphones. Museums and historic sites also utilize this technology. The Texas Historical Commission created "Texas Time Travel Tours" using OnCell's platform. OnCell is a mobile communication company who since 2006 has provided a web-based content management system which allows museums, for example, to utilize their artifacts within easily-employed templates similar to ESRI's Story Map Journal to create their own informative web content and mobile tours in a spatial history format.[37]

The Texas Historical Commission found that printing brochures was expensive and it limited the content they could use. The mobile app, which allows visual storytelling using historic photos and videos from Texas's heritage, has broadened the visitor demographic to the 550 state-wide sites featured in the app. The app also allows for individual tours to be downloaded for use in areas with limited cell phone connectivity. Its GPS feature helps visitors locate nearby points of interest as well as share content with social media.

OnCell has recently partnered with the U.S. Forest Service to launch a mobile tour app for every forest. Because a smartphone is a valuable part of a traveler's toolkit,

[37] As creators of a "leading digital storytelling platform for cultural destinations…,"[37] they have helped museums, government agencies and non-profits create over 2200 mobile apps to" enhance the visitor experience by offering consistent educational and wayfinding content. https://www.oncell.com/faq/

the apps will provide additional educational and interpretive information and real time alerts to visitors. Apps for all sites should be available mid-2017.[38]

The creation of an attractive place image is noticeable on the new McIntosh County and city of Darien websites. Providing additional information about the history of the county and region through immersive stories and a variety of historic images can document the past as well as provide enticing reasons to visit in person or to connect existing tourists more deeply to the McIntosh landscape they already enjoy.

[38] https://blog.oncell.com/2016/12/28/oncell-partnership-with-u-s-forest-service-aims-to-launch-an-app-for-every-forest/

CHAPTER 8

CULTURAL HERITAGE TOURISM

Tourism has become a powerful and transformative force that is making a genuine difference in the lives of the more than one billion international tourists now traveling the world each year and in the lives of those employed and impacted by the travel industry.”[39] Each year the United Nations dedicates a twelve-month period upon which to focus their efforts, such as sustainable energy, sanitation, or youth. Because of tourism’s far-reaching impact, the United Nations has declared the year 2017 as the International Year of Sustainable Tourism for Development. Their upcoming conference, “Culture, Sustainability and Place: Innovative Approaches for Tourism Development,” will bring together cultural heritage researchers, local development actors, and tourism practitioners to explore how culture is critical to the economies of countries throughout the world.[40]

In the United States heritage tourism is supported in many ways by the federal government. Presidential Executive Order 13287 defines heritage tourism as, “the business and practice of attracting and accommodating visitors to a place or area based especially on the unique or special aspects of that locale’s history, landscape (including trail systems), and culture.”[41] According to Section 5, “the Secretary of Commerce,

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[39] http://media.unwto.org/press-release/2015-12-07/united-nations-declares-2017-international-year-sustainable-tourism-develop

[40] http://www.ces.uc.pt/eventos/culture_sustainability/

[41] Preserve America is a national initiative in cooperation with the Advisory Council on Historic Preservation Quality. http://www.preserveamerica.gov/EO.html

working with the Council[42] and other agencies, shall assist States, Indian tribes, and local communities in promoting the use of historic properties for heritage tourism and related economic development in a manner that contributes to the long-term preservation and productive use of those properties." The 2014 Office of the President report, "Increasing Tourism to spur Economic Growth: Progress on the President's National Travel and Tourism Strategy," states that "exploring the iconic landscape and national treasures across the country is a great pastime for American families and one that is critical to the economic health of states and cities."[43]

The National Trust for Historic Preservation, a United States non-profit whose mission is to protect the places where our nation's diverse history took place,[44] defines cultural heritage tourism as traveling to experience the places, artifacts and activities that authentically represent the stories and people of the past and present."[45] "A town, city or urban region has a potential which stems from its own natural form, sense of place, sense of history, spirit and ethos" (Chiabai, Paskaleva, and Lombardi 2013). The distinctiveness of these unique historic locations attracts tourists who provide revenue to the community which in turn is "a key generator of the resources necessary to preserve and enhance cultural heritage" (Chiabai, Paskaleva, and Lombardi 2013). In other words, heritage or history provides the resource with which to create a tourist economy while the tourist economy generates the funds to be used to continue to preserve and interpret the local cultural heritage in a reciprocal relationship. It is necessary to preserve the "the physical aspects of cultural heritage (the brick and mortar of historical buildings, the

[42] Advisory Council on Historic Preservation
[43] *https://obamawhitehouse.archives.gov/sites/.../travel_and_tourism_progress_report.pdf*
[44] https://savingplaces.org/we-are-saving-places
[45] https://savingplaces.org/stories/preservation-glossary-todays-word-heritage-tourism

objects of material culture…)" A UNESCO Dimension III working document, "Sustainable Management of Cultural Heritage for Development" asserts that their longevity plays an important role in building an attractive image for investors, tourists, and citizens. "Tourism… is essential to a community's economic vitality, sustainability, and profitability [therefore] history can and should be used as a selling point for a community." [46]

The shift in tourism from relaxation to self-discovery is reflected in the explosion of niche market designations within the tourism industry. A 2009 study, undertaken by the Office of Travel and Tourism Industries at the U.S. Department of Commerce revealed that even through the recent recession, 78% of all U.S. leisure travelers participated in cultural and/or heritage activities while traveling, translating to 118.3 million adults each year. With cultural and heritage travelers spending an average of $994 per trip, they contributed more than $192 billion annually to the U.S. economy. Helen Marano, former director of the office, was quoted as saying that these "expenditures confirm that this is a strong market, and they are contributing significantly to our communities during these challenging economic times."[47]

The study is the first to segment cultural and/or heritage travelers into five groups, three of which: 1**.** Passionate, 2. Well-rounded, and 3. Aspirational/Self-Guided, were more serious about their travels and said that cultural and heritage activities had a greater impact on their destination choice. Together, these three segments represent 40% of all leisure travelers and contribute nearly $124 billion to the U.S. economy. The vast

[46] The Heritage Tourism Handbook: A How-to-Guide for Georgia was co-produced in March 2010 by the Historic Preservation Division (HPD) and the Georgia Department of Economic Development (GDEcD).
[47] http://www.prnewswire.com/news-releases/new-study-reveals-popularity-of-us-cultural-and-heritage-travel-65184252.html

majority of these travelers (65%) say that they seek travel experiences where the "destination, its buildings and surroundings have retained their historic character."[48]

Cultural and heritage travelers, claimed the study, travel more frequently, reporting an average of five trips per year which included the following activities:

- visiting historic sites (66%)
- attending historical re-enactments (64%);
- visiting art museums/galleries (54%)
- attending an art/craft fair or festival (45%)
- attending a professional dance performance (44%)
- visiting state/national parks (41%);
- shopping in museum stores (32%)
- exploring urban neighborhoods (30%)

The cultural heritage traveler, interested in "novel location-based experiences with an emphasis on history" seeks travel experiences that broaden and deepen his or her understanding of other places and people. (Benyon et al. 2014). The cultural heritage tourist is, among other attributes:

> • **Well educated** –Education level is the single most significant factor that influences cultural and heritage participation and travel.
> • **Influenced by women** – Women typically plan family vacations and group trips, and also control more personal discretionary income.
> • **Generous in spending** – Visitors to historic and cultural sites spend about $62 more per day than other visitors.
> • **Interested in authenticity** – The heritage tourist seeks out experiences that are authentic and combine education and entertainment in order to learn about a community's history and culture.

Until recently, studies showed, it was older travelers between ages forty-five and sixty-five who were the most ardent seekers of cultural experiences, but the results of the 2014 Georgia Tourism Regional Visitor Profile for the coastal region found that the

[48] The study was conducted by Mandala Research for the U.S. Cultural & Heritage Tourism Marketing Council, in conjunction with the U.S. Department of Commerce. Heritage Travel, Inc., a subsidiary of The National Trust for Historic Preservation, and its website www.gozaic.com was lead sponsor of the study.

eighteen to thirty-four year age category exceeded, by nine percent, the forty-five to sixty-five age-group as culture seekers.[49] The tourism industry in Georgia is the fifth largest industry in the state. With a total economic impact of 58.9 billion dollars, the tourism industry in Georgia supports 439,000 jobs. Taxes of three billion dollars were generated by tourism in 2015[50].

According to Donald Rypkema, in his 2010 publication, "Good News in Tough Times: Historic Preservation and the Georgia Economy," while Georgia is ranked as the eighth most visited of all states, it ranks fifth for heritage tourists. His study states that the second reason after general sightseeing that visitors come to Georgia and extend their visits here, is to visit historic areas. These visitors include twenty-six percent of all domestic leisure visitors and forty-five percent of leisure traveler expenditures. The restaurants, hotels, shops, and transportation that serve the sites that tourists visit account for ninety-three percent of visitor expenditures. Rypkema's study includes only those categories of visitors who plan their trip specifically to participate in cultural/heritage experiences and those who actively include cultural/heritage activities during their travels.

The City of Darien is well aware of the benefits of cultural tourism on economic development. In Appendix C of Darien's Code of Ordinances, provisions are set forth to "Improve the quality of life for area residents through the economic benefits of cultural and heritage tourism that support a healthy and sustainable economy… Create vital historic downtowns and neighborhoods that accommodate present-day lifestyles while remaining strongly grounded in their cultural heritage." Appendix C also refers to the

[49] Year-End 2014 Georgia Tourism Region Visitor Profile: The Coast Region.
[50] Marketgeorgia.org

Five Principles of Heritage Tourism, developed by the National Trust for Historic Preservation to help communities create a sustainable cultural heritage tourism program:

> "1. Foster collaboration between entities, such as retail with tour operators, restaurants with hotels, and between cities and regional entities.
>
> 2. Find the fit between the community & tourism by balancing the needs of residents with those of visitors so that cultural heritage tourism benefits everyone. It is important to understand the kind and amount of tourism that your community can handle.
>
> 3. Make sites and programs come alive by interpreting sites so that visitors have an active experience with which to engage all their senses as people remember ninety percent of that in which they are actively engaged.
>
> 4. Focus on quality and authenticity because the story of the authentic contributions previous generations have made to the history and culture of where you live will distinguish an area from every other place on earth.
>
> 5. Preserve and protect resources because they are not replaceable. A plaque pointing out 'on this site a great building once stood' can't tell that story."

Tourism "contributes to the discovery of the world [and] to our way of interpreting it" (Jackson 1980). Understanding our cultural landscapes and the composition of elements that bind the spaces and structures, the farms and industries, the configuration of land uses and the roads that connect them help us appreciate the places we live and visit. Websites and mobile applications like Cleveland Historical "connect history to landscape to enhance understanding of place" (Tebeau 2013). The stories transform the destination into a living museum through which we can remake our understandings of place and community identity" (Tebeau 2013).

One topic at the September 2017 conference of the European Cultural Tourism Network, will address heritage interpretation and smart (as in smart phone) destinations.[51] According to Elizabeth Lee, managing director of CyArk[52], "in an age of being able to access nearly anything from your smartphone, global tourism is at an all-time high."[53] The new technologies such as, virtual reality, provide travel images that entice visitors to destinations, not deter them. According to CyArk's research in virtual reality, sixty-seven percent of people who experienced a site virtually became *more* interested in making the trip in person.

An early 2016 study conducted by YouGov[54] corroborated these results. The study surveyed over ten thousand travelers across twenty-one countries in the Middle East, North Africa and South Asia region regarding, in part, the virtual reality 'try before you buy' technology. Results indicated that fifty-one percent of participants believed that being able to preview their intended destination through virtual reality software was the most appealing technological travel-booking concept and seventy-one percent were prepared to download travel specific virtual reality content to their devices.[55]

The reason for this, studies from UNWTO (United Nations World Travel Organization) and other organizations show, is that empathy and emotional response are key factors in the selection of potential travel destinations. When travelers experience a destination virtually, using a computer or smart phone, it elicits genuine emotions in them as it would if they were on site. Therefore, the value of a virtual experience creates a strong connection in the viewer for the destination and has an empathy-building function which can also promote more thoughtful and respectful tourism, writes Lee.

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[51] http://www.culturaltourism-network.eu/conference-2017.html
[52] An international, non-profit that digitally archives world heritage sites to create a free, 3-D online library for the education and preservation of current and future generations.
[53] http://www.cyark.org/news/smart-destinations-2017-tourism-in-the-technology-age
[54] YouGov monitors a daily record of their online community's habits and opinions to enable collaborative decision making between community members and the companies, governments and institutions that they sustain.
[55] http://research.mena.yougov.com/en/news/2016/04/26/futures-looking-virtual-travel-booking-menasa/

CONCLUSION

When we design a spatial history to recount the story of landscape change, we are engaged in a cultural practice like writing a book or making a film. Culture, as defined by Janet Murray, is the infinite web of meaning woven by human beings for millennia. Because of the common values, practices and symbolic codes of language we share, spatial histories convey information to us through a common understanding of the cultural objects we use to tell our story, like the maps or photographs we select (Murray 2011).

The coastal Georgia landscape tells the story of the colonial settlement of the Southern United States. McIntosh County is part of that colonial story. The strategic use of public history can be an effective mechanism for the appreciation and preservation of the historic landscape (Hurley 2010). Using maps to speak about the social worlds of the past (Harley 2001) is one way to reveal the dramatic changes that our culture, economy and the ingenuity of our ancestors wrought upon the landscape. Recounting history spatially serves to make events more tangible and relatable. Using the new technologies discussed in this thesis to create and disseminate spatial histories makes them available to more people, in more places, even in the exact location where history occurred. Digital historians are interpreters of geographic and cartographic memory. Through these digital histories we can inform the researcher, enlighten the student, collaborate with the citizenry and entice the visitor. Preserving and interpreting our landscapes' histories can

help future generations create a sense of place within them (Lozny 2006). This can be done on the ground and in the cloud.

The professions of planning and historic preservation play a part in the preservation and transformation of landscapes and their stories. These two disciplines have evolved over time as a result of the contributions of many of their practitioners. Patrick Geddes believed it was important to understand the city in the context of its geographic region and natural features. Alois Reigl understood the ability of the common man to appreciate the historic as well as use-value of a community's physical structure. Camillo Sitte saw the city as a historical continuum of constant transformation. Kevin Lynch demonstrated that people interact with physical space through their perception and interpretation of that space. Christian Norberg-Schulz posited that the meaning of a place is derived from its relationship with those who occupy the space and animate it with their existence. These professionals helped to create an understanding of the value of cultural landscapes. Cultural tourism is a major industry that has developed around these values (Bandarin and Oers 2012).

McIntosh County's success as a tourist destination rests on its accessibility via Intersate-95 and its location within the coastal corridor. Upon completion of the Coastal Georgia Greenway in McIntosh County the potential exists of the Greenway being a destination in itself as points along its route will be connected to one another making it easier for cycling groups, for example, to plan extensive trips using the designated trails. It will also provide an alternative method of transportation for those traveling the Colonial Coastal Birding Trail and the Gullah Geechee Heritage Corridor and will attract Greenway users to these other corridor's points of interest if they are well-marked or are

included on digital platforms accessed through mobile technology. The technology is ready for a spatial history of McIntosh County's landscape connected to points of interest located on a map accessible via a mobile application or on a standard website.

The stories told on the app will interpret cultural heritage offerings and will allow personal encounters with the local customs, traditions, arts, history, and sites that authentically represent McIntosh County and that give the community's residents its sense of identity as well as tell its story. The Georgia Heritage Tourism Handbook states that tourism "is essential to a community's economic vitality, sustainability, and profitability [therefore] history can and should be used as a selling point for a community." [56] The Handbook also affirms that it is the availability of global communication that fuels this type of tourism, however it is the local residents who contribute to and benefit from the success of the heritage tourism industry:

> "Heritage tourism protects historic, cultural, and natural resources in towns and cities by involving people in their community. When they can relate to their personal, local, regional, or national heritage, people are more often motivated to safeguard their historic resources which provides continuity and context for a community's residents, and it strengthens citizenship values, builds community pride, and improves quality of life."

This thesis utilized the understanding that maps tell stories, whether because they are merely a product of the mapmaker's cultural biases or intentionally the way spatial historians use maps on which to locate events and place the map user within the historic landscape making the history come alive. Maps can be used to tell stories about the

[56] The Heritage Tourism Handbook: A How-to-Guide for Georgia was co-produced in March 2010 by the Historic Preservation Division (HPD) and the Georgia Department of Economic Development (GDEcD).

landscape features that are no longer evident or to tell the stories of cultural groups who were formerly not thought to be relevant.

The American South's plantation museums, for example, vary in the telling of the history of enslaved African Americans. In the past the inclusion of painful or embarrassing memories in the interpretation of the spaces in which slaves lived and worked was not thought to be edutainment for tourists who may want to participate in enjoyable distractions while on vacation. Per the definition of nostalgia, the stories marketed in the southern plantation museums were fitting for the celebration of the virtues of southern plantation life, not necessarily for revealing its inequities and iniquities. Visitors too, bring their own preconceptions and cultural filters with which to perceive the stories told about the landscape. (Svalduz 2013; Carter 2014). The "Gone with the Wind" image of antebellum life that many visitors and museums maintain, is slowly giving way to more accurate depictions of the hardships of slavery that existed on southern plantations (Carter 2014). Heritage is a product of the present created to satisfy the visitor of today, but history can be rewritten according to different or more comprehensive perspectives (Bohlin & Brandt 2014).

To tell the story of the landscape of the American South and McIntosh County and not include the story of how the labor of enslaved Africans was what sustained the people and agricultural industries in this part of the United States is to only tell half the story. By providing an overview of how the story of landscape change can be told, this thesis paves the way for a more thorough investigation of the story of the people who played a large part in landscape change in McIntosh County and the coast of Georgia. This yet undeveloped story can be told in a graduate thesis, through a digital history

platform, or within the McIntosh County landscape through interpretive displays within the landscape and history fabric of the county.

Telling the story of the lives of African Americans who were part of McIntosh County from slavery, through the Civil Rights era until today can reveal unrecognized histories and applaud the contributions of all citizens. This narrative, aligned with the goals of the Gullah Geechee Heritage Corridor can supplement existing tourist activity for the area. Restoring and utilizing the Adam Strain building, one of the only buildings that survived the burning of Darien in 1863 by black Union Army troops, interpreting the theater on Broad Street that was burned during the Civil Rights era, and telling the layered story of land use on Butler's Island from rice plantation, to dairy farm then truck farm, to bird sanctuary provides opportunity to put the landscape and its buildings to new symbolic and functional uses and tell the story of their past (Hurley 2010). For a digital history, the method used for recreating the three dimensional Indian village in Virtual Jamestown would be an excellent technique for interpreting the antebellum era on Butler's Island by providing three-dimensional imagery of the plantation buildings as shown on the map in Fanny Kemble's *Journal of a Residence on a Georgian Plantation in 1838-1839.*

Bob McNulty, president of Partners for Livable Communities, describes tourism as needing "to be part of a community mobilization strategy that can reinvent the role of heritage so that it serves the needs of everyone." Furthermore, he asserts that "small-scale tourism [that capitalizes on a city's historic buildings] is often far more beneficial to

local economies than the rapid expansion of massive resort enclaves that dominate many tourism-dependent regions."[57]

The spatial history accompanying this thesis, which was created to depict landscape change in McIntosh County, uses a chronological timeline, thematic interpretation, and material culture elements, to digitally produce a narrative which can help promote, preserve, and applaud McIntosh County's historic landscape which allows residents and visitors to more easily read, understand and enjoy its history. The content of this spatial history can be used as an impetus for maintaining the county's historic fabric, which provides the location for economic development to occur, as vibrant downtowns with historic cores are appealing to travelers and residents alike.

Spatial histories are an interpretative way of preserving the past. The internet can make these stories available to a wide audience and viewing the history of your vacation destination on your smart phone while standing in the spot where history happened can engage loyal visitors as well as attract new visitors. An attractive and informative web presence is important for economic development within the existing tourist industry in McIntosh County. Websites have become the marketing brochures of the present and future. McIntosh County, with its 281-year history, can be transformed into a digital museum through the stories told using a spatial history web platform in order to ensure the preservation of its important legacy within Georgia's history while enhancing a heritage tourism presence as part of Georgia's coastal corridor.

[57] livable.org/storage/documents/reports/CBC/culturalheritagetourism.pdf

REFERENCES

Balletti, Caterina, and Francesco Guerra. 2016. "Historical Maps for 3D Digital City's History." *Cartographica* 51 (3):115. doi: 10.3138/cart.51.3.3140.

Bandarin, Francesco, and Ron van Oers. 2012. *The Historic Urban Landscape : Managing Heritage in an Urban Century*: Chichester, West Sussex, UK; Ames, Iowa: Wiley-Blackwell, 2012. Bibliographies

Benyon, David, Aaron Quigley, Brian O'Keefe, and Giuseppe Riva. 2014. "Presence and Digital Tourism." *AI & Society* 29 (4):521-529. doi: 10.1007/s00146-013-0493-8

Bohlin, M., and D. Brandt. 2014. "Creating Tourist Experiences by Interpreting Places Using Digital Guides." *Journal of Heritage Tourism* 9, no. 1: 1-17.

Boone, Kofi. 2015. "Disembodied Voices, Embodied Places: Mobile Technology, Enabling Discourse, and Interpreting Place." *Landscape and Urban Planning*, Special Issue: Critical Approaches to Landscape Visualization: 235-242.

Boonstra, Onno. 2013. "The Dawn of a Golden Age? Historical GIS and the History of Choropleth Mapping in the Netherlands." In *History and GIS: Epistemologies, Considerations and Reflections*, edited by Alexander von Lunen and Charles Travis, 27-38. New York and Heidelberg: Springer.

Brotton, Jerry. 2014. *Great Maps*: New York, New York: DK Publishing, 2014.

Carney, Judith Ann. 2001. *Black Rice: The African Origins of Rice Cultivation in The Americas*: Cambridge, MA: Harvard University Press, 2001.

Carter, P., D.L. Butler, and D.H. Alderman. (2014). "The House That Story Built: The Place of Slavery in Plantation Museum Narratives." *Professional Geographer*, 66 (4) 547-557.

Carter, Paul. 1988. *The Road to Botany Bay: An Exploration of Landscape and History*. New York: Knopf. 1988.

Chiabai, A., K. Paskaleva, and P. Lombardi. 2013. "e-Participation Model for Sustainable Cultural Tourism Management: A Bottom-Up Approach." *International Journal of Tourism Research* 15 (1):35-51.

Cosgrove, Denis E., and Stephen Daniels. 1988. *The Iconography of Landscape: Essays On the Symbolic Representation, Design, And Use of Past Environments*, *Cambridge Studies in Historical Geography: 9*: Cambridge [England]; New York: Cambridge University Press, 1988. Bibliographies

Crampton, Jeremy W.; Krygier, John. An Introduction to Critical Cartography. ACME: An International Journal for Critical Geographies**,** [S.l.], v. 4, n. 1, p. 11-33, mar. 2015. ISSN 1492-9732. http://ojs.unbc.ca/index.php/acme/article/view/723. Date accessed: 03 apr. 2017.

Crawford, Tom. "Rayonier loses round in environmental lawsuit." The Georgia Report. October 5, 2016. http://gareport.com/story/2016/10/05/rayonier-loses-round- in-environmental-lawsuit/

Crisp, Edw, Thomas Nairne, John Harris, Maurice Mathews, and John Love. *A Compleat Description of The Province of Carolina in 3 Parts: 1st, The Improved Part From The Surveys of Maurice Mathews & Mr. John Love: 2ly, The West Part by Capt. Tho. Nairn: 3ly, A Chart of the Coast from Virginia to Cape Florida*. [London: Edw. Crisp, 1711] Map. Retrieved from the Library of Congress, https://www.loc.gov/item/2004626926/. (Accessed April 18, 2017.)

Denevan, William M. 1992. "The Pristine Myth: The Landscape of the Americas in 1492." *Annals of the Association of American Geographers*, 1992. 369. *JSTOR Journals*, EBSCO*host* (accessed April 24, 2017).

De Van Perrine, Rachel Laura. 2012. Thesis."Bourbon Field: Preliminary Investigations of a Barrier Island Plantation Site, Sapelo Island, Georgia." University of West Florida.

de Vorsey, Louis. 1986. "Maps in Colonial Promotion: James Edward Oglethorpe's Use of Maps in 'Selling' the Georgia Scheme." 35.

Del Casino Jr, Vincent J. and Stephen P Hanna. 2006. "Beyond the 'Binaries': A Methodological Intervention for Interrogating Maps as Representational Practices." *ACME: An International E-Journal for Critical Geographies* 4 (1):34-56.

Deming, M. Elen, and Simon R. Swaffield. 2011. *Landscape Architecture Research: Inquiry, Strategy, Design*: Hoboken, N.J.: Wiley, c2011. Bibliographies

Drakoulis, Dr Dimitris. 2007. "The Study of Late Antique Cartography through Web Based Sources", *e- Perimetron*, Vol. 2, No. 3. Accessed April 16, 2017. 160-172.

Edelson, S. Max, "Clearing Swamps, Harvesting Forests: Trees and the Making of a . Plantation Landscape in the Colonial South Carolina Lowcountry." *Agricultural History*. Vol. 81, No. 3. pp. 381-406

Edney, Matthew H. 2008. "John Mitchell's Map of North America (1755): A Study of the Use and Publication of Official Maps in Eighteenth-Century Britain." 63.

Edwards, Leslie, Jonathan Ambrose, L. Katherine Kirkman, Hugh O. Nourse, and Carol Nourse. 2013. *The Natural Communities of Georgia*: Athens: University of Georgia Press, c2013. Bibliographies

Elwood, Sarah. 2006. "Critical Issues in Participatory GIS: Deconstructions, Reconstructions, and New Research Directions." *Transactions in GIS* 10 (5):693-708. doi: 10.1111/j.1467-9671.2006.01023x.

Elwood, Sarah. 2008. "Volunteered Geographic Information: Future Research Directions Motivated by Critical, Participatory, and Feminist GIS." 173.

Fairclough, Graham. 2006. "A New Landscape for Cultural Heritage Management: Characterization as a Management Tool." In *Landscapes under Pressure: Theory and Practice of Cultural Heritage Research and Preservation*: New York: Springer, 2006.

Ferrighi, Alessandra. 2013. *Visualizing Venice: A Series of Case Studies and a Museum on the Arsenale's Virtual History.* In Built City, Designed City, Virtual City: The Museum of the City, Edited by Donatella Calabi, 137-151. Centre for Studies of Rome, Roma Tre University. *www.visualizingvenice.org/visu/wp-content/uploads/.../alessandra_museums1.pdf*

Forman, Richard T. T. 2008. *Urban Regions: Ecology and Planning Beyond the City*. Cambridge, UK; New York: Cambridge University Press.

Fraley, Jill M. 2011. "Images of Force: The Power of Maps in Community Development." *Community Development Journal* 46, no. 4: 421-435.

Fu, Pinde. 2015. *Getting to Know Web GIS*: Redlands, California: Esri Press, 2015

Grele, Ronald J. 1981. "Whose Public? Whose History? What Is the Goal of a Public Historian?" 40.

Griffith, G.E., Omernik, J.M., Comstock, J.A., Lawrence, and Foster, T., 2001, Ecoregions of Georgia: Corvallis, Oregon, U.S. Environmental Protection Agency (map scale 1:1,500,000)

Gullah Geechee Cultural Heritage Corridor Management Plan [electronic resource] / Gullah Geechee Cultural Heritage Corridor Commission. n.p.: Denver, Co.: U.S Dept. of the Interior, National Park Service, 2012. Government Printing Office Catalog, EBSCOhost (accessed April 3, 2017).

Harley, J. B. 2001. *The New Nature of Maps: Essays in the History of Cartography*. Edited by Paul Laxton. Johns Hopkins University Press: Baltimore, Md.

Harvey, Francis. 2001. Constructing GIS: Actor Networks of Collaboration. *URISA Journal* 13 (1), 29-37.

Hayden, Dolores. 1995. *The Power of Place: Urban Landscapes as Public History*. MIT Press: Cambridge, Mass.

Hodgkiss, A. G. 1981. *Understanding Maps: A Systematic History of Their Use and Development*: Folkestone, Kent: Dawson, 1981. Bibliographies

Honerkamp, Nicholas. 2008. "Archaeological Survey and Testing at High Point Plantation (9MC66), Sapelo Island, Georgia." University of Tennessee at Chattanooga: Chattanooga, Tenessee.

Hunt, Arthur. 2000. "2000 Years of Map Making." 3.

Hurley, Andrew. 2010. *Beyond Preservation: Using Public History to Revitalize Inner Cities, Urban Life, Landscape and Policy*: Philadelphia: Temple University Press, 2010.

Issac, Mike. "Mark Zuckerberg Sees Augmented Reality Ecosystem in Facebook." *The New York Times.* April 18, 2017. Accessed April 20, 2017. https://www.nytimes.com/2017/04/18/technology/mark-zuckerberg-sees-augmented- reality-ecosystem-in-facebook.html

Jackson, John Brinckerhoff. 1980. *The Necessity for Ruins, and Other Topics*. University of Massachusetts Press: Amherst.

Jackson, John Brinckerhoff, and D. W. Meinig. 1979. *The Interpretation of Ordinary Landscapes: Geographical Essays*. Oxford University Press: New York.

Joseph, J.W., Elliott, Rita F., and Smith, Greg C. 2015. Telling Time by the Tides: An Archaeological History of the Cathead Creek Historic District, McIntosh County, Georgia. Georgia Department of Transportation: Atlanta and New South Associates: Stone Mountain.

Kemble, Fanny. 1863. *Journal of a Residence on a Georgian Plantation* in 1838-1839. New York: Harper & Brothers, 1863; reprint, New York: Knopf, 1961, reprint, Athens, GA: UGA Press, 1984.

Kuchler, Hannah and Tim Bradshaw. "Facebook Lays out Vision for Augmented Reality." *The Financial Times.* April 18, 2017. Accessed 4/20/2017. https://www.ft.com/content/2104af82-245f-11e7-8691-d5f7e0cd0a16

Liddington, Jill. 2002. "What Is Public History? Publics and Their Pasts, Meanings and Practices." 83.

Lozny, Ludomir R. 2006. *Landscapes Under Pressure: Theory and Practice of Cultural Heritage Research and Preservation*: New York: Springer, c2006. Bibliographies

Matthews, Christopher, N. 2006. "The Idea of the Site: History, Heritage, and Locality in Community Archaelogy." In *Landscapes Under Pressure: Theory and Practice of Cultural Heritage Research and Preservation*: New York: Springer, 2006.

McClay, Wilfred M. 2014. *Why Place Matters: Geography, Identity, and Civic Life in Modern America*: New York: Encounter Books.

McNulty, Robert; Koff, Russell. 2014. "Cultural Heritage Tourism Guide," Partners for Livable Communities. Accessed February 3, 2017. http://www.livable.org/livability-resources/reports- a-publications/770-cultural-heritage-tourism

Merchant, Carolyn. 2007. *American Environmental History: An Introduction*. Columbia University Press: New York.

Monmonier, Mark S. 1996. *How to Lie with Maps*: Chicago: University of Chicago Press, c1996.

Moore, Alexander. 1985. "Thomas Nairne's 1708 Western Expedition: An Episode in the Anglo-French Competition for Empire." *Proceedings of the Meeting of the French Colonial Historical Society*, 1985. 47. *JSTOR Journals*, EBSCO*host* (accessed April 16, 2017).

Murray, Janet. 2011. *Inventing the Medium: Principles of Interaction Design as a Cultural Practice.* [electronic resource] Cambridge, Mass: MIT Press. *University of Georgia Catalog*, EBSCOhost (accessed March 17, 2017).

Nash, Roderick. 1972. "American Environmental History: A New Teaching Frontier." *Pacific Historical Review* 41 (3):362-372. doi: 10.2307/3637864.

National Oceanic and Atmospheric Administration; Department of Commerce; U.S. Census Bureau. 2013. National Coastal Population Report: Population Trends from 1970 to 2020. NOAA's State of the Coast Report Series March 2013.

National Park Service. An Ecological Survey of the Coastal Region of Georgia. In NPS Scientific Monograph No. 3. Last Updated: April 1, 2005. https://www.nps.gov/parkhistory/online_books/science/3/chap4.htm

Nobles, Gregory H. 1993. "Straight Lines and Stability: Mapping the Political Order of the Anglo-American Frontier." 9.

Population of McIntosh County, Georgia: Census 2010 and 2000 Interactive Map, Demographics, Statistics, Graphs, Quick Facts. 2010 and 2000. U.S. Census Bureau. Accessed March10, 2017 http://censusviewer.com/county/GA/McIntosh

Rifai, Taleb. 2017. The Year Ahead: Harnessing the Power of Tourism to Build a Better World**.** Press Release Number: 17001. January 3, 2017.

Ristow, Walter W. 2014. Introduction to the Sanborn Map Collection. Geography & Map Reading Room. Library of Congress. https://www.loc.gov/rr/geogmap/sanborn/san4a1.html

Roberts, Les. 2012. *Mapping Cultures: Place, Practice, Performance*: Houndmills, Basingstoke, Hampshire; New York: Palgrave Macmillan, 2012. Bibliographies

Robinson, Arthur Howard, and Barbara Bartz Petchenik. 1976. *The Nature of Maps: Essays Toward Understanding Maps and Mapping*: Chicago: University of Chicago Press, 1976.

Sears, Joan Niles. 1979. *The First One Hundred Years of Town Planning in Georgia*. Cherokee Pub. Co.: Atlanta.

Smith, C. W., and R. H. Dilday. 2002. Rice: origin, history, technology and production. In *Rice: Origin, History, Technology and Production*, edited by C. W. Smith and R. H. Dilday. Hoboken; USA: John Wiley & Sons, Inc.

Smith, Catherine Delano. "Imago Mundi's Logo the Babylonian Map of the World." *Imago Mundi* 48 (1996): 209-11. http://www.jstor.org/stable/1151277.

Spalding, Phinizy, and Harvey H. Jackson. 1989. *Oglethorpe in Perspective: Georgia's Founder after Two Hundred Years*. Edited by University of Alabama Press: Tuscaloosa.

Stewart, Mart A. 1998. "Environmental History: Profile of a Developing Field." 351.

Stewart, Mart A. 2002. *"What Nature Suffers to Groe: Life, Labor, and Landscape on the Georgia Coast, 1680-1920, Wormsloe Foundation Publications: no. 19*: Athens: University of Georgia Press, 2002. University of Georgia Press.

Stewart, Mart A. 2007. "From King Cane to King Cotton: Razing Cane in the Old South." 59.

Stewart, Mart A. 2011. "William Gerard de Brahm's 1757 Map of South Carolina and Georgia." 523.

Stewart, Mart Allen. 1988. "Land Use and Landscapes: Environment and Social Change in Coastal Georgia, 1680-1880." 49 Dissertation, EBSCOhost.

Sullivan, Buddy. 2000. *Darien and McIntosh County, Images of America*: Charleston, SC: Arcadia, c2000.

Sullivan, Buddy. 2016. *Early Days on the Georgia Tidewater*: [Georgia]: [Buddy Sullivan], 2016.

Svalduz, Elena. 2013 "Researching, Interpreting And Representing Reflections on a Few Experiences (M9, Carpi, Vv And The Accademia). In Built City, Designed City, Virtual City: The Museum of the City, Edited by Donatella Calabi, 121-135. Centre for Studies of Rome, Roma Tre University. www.visualizingvenice.org/visu/wp-content/uploads/.../alessandra_museums1.pdf

Tally, Robert T. 2013. *Spatiality, New Critical Idiom.* Routledge: Abingdon, Oxon.

Tebeau, Mark. 2013. "Listening to the City: Oral History and Place in the Digital Era." *Oral History Review* (1):25.

Thatcher, Jim, Luke Bergmann, Britta Ricker, Reuben Rose-Redwood, David O'Sullivan, Trevor J. Barnes, Luke R. Barnesmoore, Laura Beltz Imaoka, Ryan Burns, Jonathan Cinnamon, Craig M. Dalton, Clinton Davis, Stuart Dunn, Francis Harvey, Jin-Kyu Jung, Ellen Kersten, LaDona Knigge, Nick Lally, Wen Lin, and Dillon Mahmoudi. 2016. "Revisiting Critical GIS." *Environment & Planning A* 48 (5):815-824. doi: 10.1177/0308518X15622208.

Theibault, John. 2012. "Visualizations and Historical Arguments" in Jack Dougherty and Kristen Nawrotzki, eds. *Writing History in the Digital Age.* University of Michigan Press. Trinity College (CT) web-book edition. http://writinghistory.trincoll.edu/

Thomas, William G. 2004. “Is the Future of Digital History Spatial History?” Presented at the Newberry Library Historical GIS conference 2005.

Thompson, Victor. "Coastal Shell Rings." New Georgia Encyclopedia. 28 August 2015. Web. Accessed 13 February 2017.

Thompson, Victor D., and John A. Turck. 2010. "Island Archaeology and the Native American Economies (2500 B.C.–A.D. 1700) of the Georgia Coast." 283.

Tiedje, Michelle. 2009. Online Review: Digital Harlem: Everyday Life 1915-1930 *Reviewed: December 2009.* http://digitalhistory.unl.edu/p-reviews/harlemtiedge.php

Tilden, Freeman. 1957. *Interpreting our Heritage; Principles and Practices for Visitor Services in Parks, Museums, and Historic Places*. University of North Carolina Press: Chapel Hill

Trubek, Anne. June 6, 2012. A City’s History, Made Mobile. https://www.yahoo.com/news/a-city-s-history-made-mobile.html?ref=gs

Tuan, Yi-Fu. 2014. “Place/Space, Ethnicity/Cosmos: How to Be More Fully Human,” in *Why Place Matters: Geography, Identity, and Civic Life in Modern America*: edited by McClay, Wilfred M. New York: Encounter Books, [2014].

University of Georgia Marine Extension. 10/27/2016. Fundraiser to Help get Attention for New Oyster Hatchery. http://businessinsavannah.com/bis/2016-10-27/fundraiser-help-get-attention-new-oyster-hatchery

Weller, Richard. 2015. "Stewardship Now?: Reflections on Landscape Architecture’s Raison d’être in the 21st Century." *Landscape Journal: Design, Planning, and Management of the Land* (2):85.

Whyte, Ian. 2013. *Dictionary of Environmental History, an Environmental History and Global Change Series*. London: I.B.Tauris.

Wilson, Matthew W. 2015. "Research Paper: On the Criticality of Mapping Practices: Geodesign as Critical GIS?" *Landscape And Urban Planning* 142:226-234. Doi: 10.1016/j.landurbplan.2013.12.017.