Navigating Historical Waters:

A Study of the Pilots and Original Settlers of Ocracoke Island

By

Bernard James Howard

Thesis Director: Dr. Lynn Harris

Department of History, Program in Maritime Studies

ABSTRACT:

Ocracoke Inlet and the surrounding islands have a long and rich history, stretching back to the Europeans' first settlements of the Carolinas, and is the only inlet that has remained open since the colonial period. The purpose of this thesis is to examine the original European settlers on the islands. This settlement was comprised entirely of pilots and their families. The pilots were tasked with the duty of safely navigating vessels around the bar and through the inlet. Utilizing historical records, such as the colonial records, archaeological and remote sensing data, and contemporary maps, this thesis will determine the effects these pilots had on navigation, commerce, and shipping routes in North Carolina.

Navigating Historical Waters:

A Study of the Pilots and Original Settlers of Ocracoke Island

A Thesis

Presented to

The Faculty of the Department of History

Program in Maritime Studies

East Carolina University

In Partial Fulfillment

of the Requirements for the Degree of

Master of Arts in Maritime Studies

by

Bernard James Howard

2016

Navigating Historical Waters:

A Study of the Pilots and Original Settlers of Ocracoke Island

By: Bernard J. Howard

APPROVED BY:

DIRECTOR OF THESIS _____

Dr. Lynn Harris

COMMITTEE MEMBER _____

Dr. Christopher Oakley

COMMITTEE MEMBER _____

Dr. Jennifer McKinnon

COMMITTEE MEMBER _____

Dr. Charles Ewen

CHAIR OF THE DEPARTMENT OF HISTORY _____

Dr. Christopher Oakley

DEAN OF THE GRADUATE SCHOOL _____

Dr. Paul J. Gemperline

ACKNOWLEDGEMENT PAGE

This thesis is dedicated to my wife for her unwavering support throughout this entire process. Without her encouragement and feedback, I would have never finished this endeavor.

A special thanks to Dr. Lynn Harris for her direction and guidance towards the completion of this thesis. Thank you to my committee for the time and support. I would like to mention Dr. Charlie Ewen for introducing me to this topic all those years ago.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction

Ocracoke Island is a small barrier island off the coast of North Carolina, with a history steeped in folklore of pirates and ghosts. There are tales ranging from Blackbeard's last stand to flaming ships that still sail the waters surrounding the island. The early history of the island is a colorful fabric of myth and legends. Without assessing primary source material, the early history of the island is somewhat ambiguous. The earliest records show the establishment of a settlement in 1715 on Ocracoke Island (General Assembly 1790 [23]:40), and there are several families still on the island that can trace their lineage back to the first settlement. In fact, the
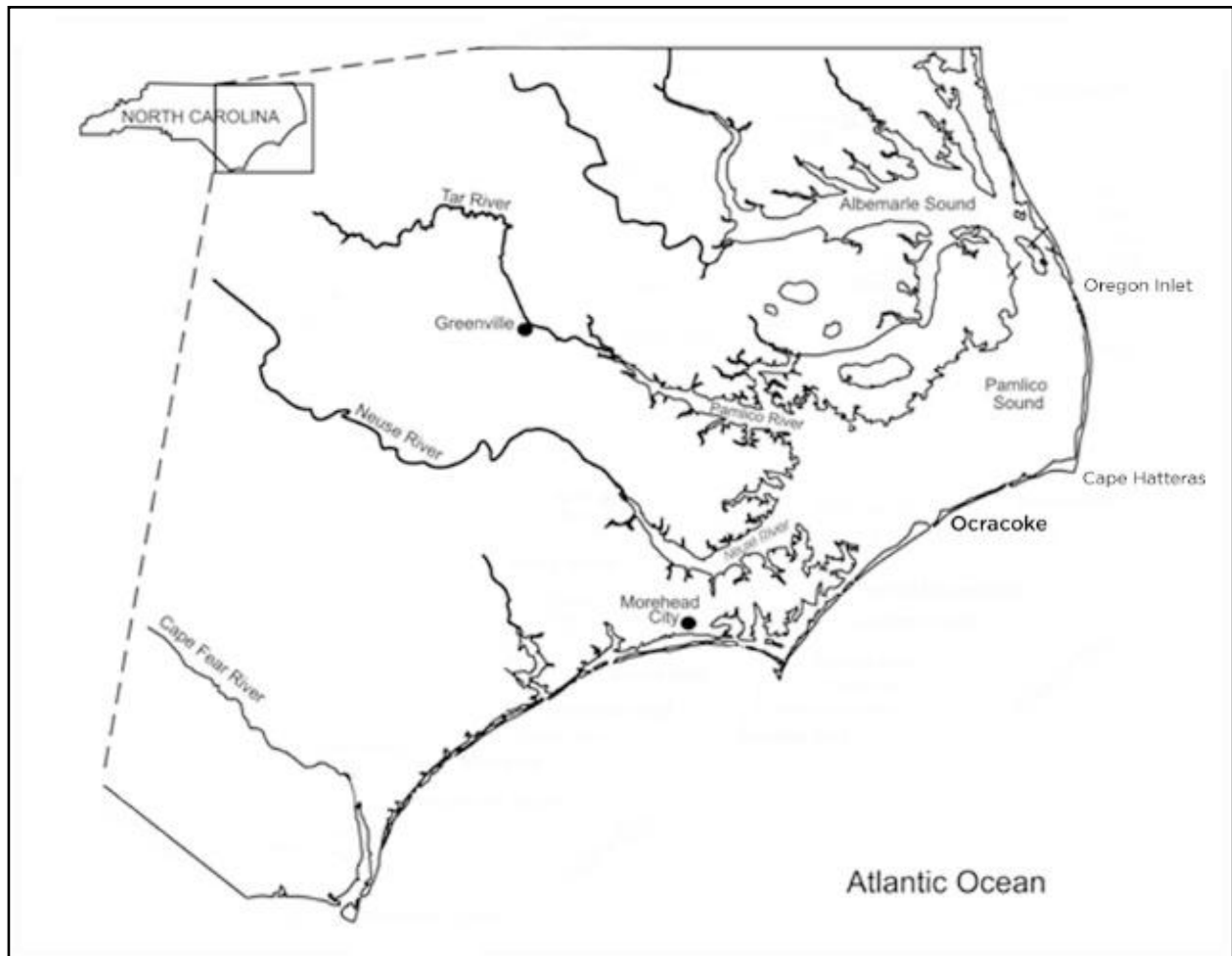

FIGURE 1. Image of Eastern North Carolina (Riggs and Ames, 2003)

Howards of Ocracoke are the direct descendants of William Howard, the first person that owned the island.

For the greater part of the 17th century, Roanoke and Currituck were the main inlets used by merchant ships to travel to inland parts of North Carolina (Newell, 1987). The shift towards the use of Ocracoke Inlet most likely occurred around the end of the 17th century as the General Assembly passed the law for settling and maintaining of pilots. When a vessel arrived at Ocracoke Inlet, it would have to wait outside the bar until a pilot arrived, took control, and navigated it safely through the inlet. If a vessel's draft was too deep, the cargo would be off loaded onto smaller shallow-drafted vessels, called lighters, and taken to one of the ports across the bar, and in some cases to its final port of call (Cecelski 2001:50).

There is very little recorded information on the use of Ocracoke or its inlet. On period maps, the name of Ocracoke Island has changed from Wococon to Occacoke/Occacock, and finally to Ocracoke. Considered the first settlers of the island, the pilots were on the island to help guide ships through the treacherous waters of the inlet. These pilots and their families established Pilot Town. The creation of Pilot Town shows the growing importance of Ocracoke Inlet. Due to coastal changes, Roanoke and Currituck Inlets were becoming too shallow for larger ships to pass through. Even with the establishment of Pilot Town, Ocracoke Inlet was still not commercially important for the first two decades (Colonial Records 1790[3]:155-156 & 210). The current believed location of Pilot Town is on the southwest side of the island, on what is now Springer's Point Nature Preserve. Pilot Town and its pilots played a very brief role in the history of North Carolina. Nonetheless, it was a vital part of the state's history, a time when the majority of merchant ships passed through the inlet.

This thesis will explore and analyze the role the Ocracoke maritime community played in facilitating safe navigation along the Outer Banks and through the inlets of North Carolina during the Colonial Period. It will investigate historical perceptions of the roles and challenges the pilots and their vessels played. In addition, it will examine the archaeological record including the databases of shipwrecks from the Underwater Archaeology Branch and the Ocracoke Shipwreck Database in order to determine any local infrastructure supporting piloting activity such as wharves, breakwaters, and warehouses, especially near Pilot Town.

This thesis makes the case if Ocracoke Inlet was once the most used inlet in North Carolina, then vessels needed experienced pilots to navigate the shifting sand bars around the inlet and the inland waterways. Thus, further research of the pilots and the original town infrastructure is required. Safe navigation through the inlet was crucial to the viability of trade to inland upriver economic centers and then outwards to Caribbean ports. The purpose of this research is to analyze the role the island community and the Ocracoke maritime infrastructure played in facilitating the pilots and tasks of pilotage as a centerpiece for a maritime landscape study. To investigate the maritime infrastructure, the author will divide the island and surrounding areas into different archaeological and economic zones. Maritime archaeologists affiliated with the St. Eustatius Center for Archaeological Research (SECAR) used this method effectively to study the island's role and local facilities for the larger Caribbean trade network (Dethlefsen at el. 1982). Creating these separate geo-spatial zones helped organize the research queries focusing on maritime landscape use related to shipping and the use of the anchorages on the island.

Using this analytical approach, the key research questions in this thesis are:

3

Primary Research Question:

- What role did the Ocracoke community, especially the pilots, play in facilitating safe navigation along the Outer Banks and through the inlets of North Carolina during the Colonial Period?

Secondary Research Questions*:*

- How do historical documents relating to Ocracoke Island reflect local navigation policy and procedure of the pilot community?

- Who served as inlet pilots, who held them accountable, and how challenging and successful were these operations?

- Does the island have archaeological footprints of maritime infrastructure for this time period, such as: anchorages, wharves, jetties, warehouses, recreational establishments, and pilot housing that might be located with systematic field surveys?

Tertiary Research Questions:

- Can the compilation of historic maps and charts serve as a tool to predict and provide visual representations of where maritime infrastructure used by the pilots might be located on the island?

- Can existing remote sensing, geological and geomorphological data determine locations of the historic anchorages and channels of Ocracoke Inlet?

Unfortunately, there has not been much archaeological research conducted on Ocracoke. In 1958, William G. Haag published "The Archaeology of Coastal North Carolina," in which he briefly discusses Ocracoke Island, stating:

> No suggestion of a wide-spread or large occupation of aboriginal peoples is found on Ocracoke. On the south edge of the village at the western-most jutting head of land, a humus line about five feet above tide may be discerned in the wave-cut bank. In the water are found numerous shells that appear to be midden concentrate rather than recent debris. One potsherd was found in the humus zone but nothing else there or in the water. A more extensive midden may have existed at one time but nothing is left to suggest this. Local informants point to this spot as the source of arrowheads and other evidence of Indians. Because of the belief that the Roanoke colonists may have come to Ocracoke, considerable attention seemed warranted for the area. Nevertheless, there is no archaeological evidence that any people ever lived here in great numbers except directly at the modern village on Silver Lake. Nothing was found in the town area despite reports to the contrary (1958: 33&34).

Aside from this, there have been a few theses written on the Outer Banks by M.A. candidates from East Carolina University's Program in Maritime Studies. Only one focused exclusively on Ocracoke Island. Sam Newell wrote this thesis in 1987. The primary purpose of his thesis was a narrative of the overall history of the island, through the end of the Civil War. However, it only briefly discusses the pilots and the original town "Pilot Town." Even though Newell does not go in to detail about the pilots, his bibliography offers many insights on where to find primary and

secondary sources on the matter. These include the "Governor Arthur Dobbs' papers, 1754 –

1765," which can be found in the North Carolina archives, and the "General Assembly Sessions

Records 1709 – 1760," as located in the North Carolina Archives.

The most critical primary sources are the colonial records, customhouse papers and

admiralty records located in North Carolina Archives in Raleigh. These sources may offer

information into who the pilots were, where they were located on Ocracoke, and possibly show

where any maritime infrastructures where located on the island. Other primary sources that are

used are colonial newspapers and journals. These types of sources will help answer questions

about the economic and cultural connections Ocracoke community had, to places like the

Caribbean and West Indies, by studying what was deemed important (and newsworthy) at the

time.

A unique primary source utilized in this thesis is the historical maps of Ocracoke Inlet.

These maps will show the usage of the inlet, the historic channel, and its changes over the years.

An understanding of these critical points will help determine navigation policy and procedure of

the pilots.

Using several different methodological approaches to answer the research questions of

this thesis, the major concept will follow the outline used during the initial research of St.

Eustatius (a Dutch island in the Caribbean, with a similar background of Ocracoke). Using the

historical record of St. Eustatius, archaeologists were able to divide the island into several

different archaeological zones, including offshore anchorage zone, inshore scatter zone, and the

lower and upper town zones. The offshore anchorage zone is an area most likely for wreckage of

ships. The inshore zone is where spillage of the goods from the ships at anchorage is most likely

to be located. The lower town zone consists of the harbor store and warehouses, whereas the upper town zone is where the homes of the locals may be situated. These specific research zones would allow archaeologists to further plan systematic investigations, while focusing on specialized topics of activities associated with heavily used areas (Dethlefsen at el. 1982).

Taking similar steps, this study will create the archaeological zones for Ocracoke Island and the inlet. The first step is conducting a thorough review of the historical record. This includes the colonial records and the information gathered by the local historians. Using the historical record will allow future researchers to determine the most viable target areas and prioritize their research focus.

After the historical record is exhausted, the next step will be the reexamination of any fieldwork previously conducted around Ocracoke. The report that will be most advantageous is the Ocracoke Remote Sensing Survey from 2003 through 2005 (Runyan). The information gathered in this survey, from Ocracoke Inlet, led to the creation of a shipwreck database. Through the research conducted, the team was able to identify over 1,500 vessels, dating from modern back to early settlement era. The survey used a side-scan sonar and a magnetometer. The surveys took place over several weeks between 2003 and 2005 (Runyan, 2005).

The data collected from the 2003 survey assisted in determining the most significant areas for further research, through the creation of the shipwreck database. The database incorporated magnetometer and side scan data, allowing the datasets to overlay onto historical maps and charts. The database has potential to show trends with GIS software according to certain factors such as the location and year of loss of the shipwrecks (Runyan, 2003:32-35). This thesis will examine the individual survey data, along with the GIS incorporated information,

7

while comparing it with the information from the historical record. When comparing the survey data to the historical records it becomes possible to locate areas of interest, such as the original port/harbor and where larger ships would have anchored while waiting for the pilots. These areas of interest will assist in the location and outlining of the archaeological zones.

The theoretical framework utilized in this thesis is rooted in Christer Westerdahl's paper on the maritime cultural landscapes (1992). Several scholars expanded on Westerdahl's idea of maritime cultural landscapes, such as Ben Ford, but the essence is that the approach explores and defines "human utilization (economy) of maritime space by boat: settlement, fishing, hunting, shipping, and its attendant subcultures, such as pilotage, lighthouse and seamark maintenance" (Westerdahl 1992: 5-7). Examining how people interacted with the maritime landscape/seascape makes it possible to understand how changes of said landscapes/seascapes influenced the maritime cultures, and visa-versa.

By expanding on Westerdahl's original idea, Ben Ford has created a more in depth concept of seascapes and maritime landscapes. Ford explains seascapes as being a construct of factors that allow an individual to perceive their location based on the cultural meaning of the factors (factors such as stars, currents, swell, clouds, etc.). Ford also explains maritime cultural landscapes as a combination of the physical aspects of the landscape and seascape used to analyze the culture of maritime people within a spatial context. This approach joins the maritime history and ethnography with the physical remains (shipwrecks, ports, harbors, villages, etc.) of past maritime cultures (Ford 2011: 4-5). The interpretation of "how people perceived and understood the sea and used this knowledge and understanding to order and constitute the landscape and societies that they live in" (O'Sullivan and Breen 2007: 15), allows maritime cultural landscape theory to not only extend beyond shipwrecks, but also allows shipwrecks to be

8

studied as features of a larger site. This creates a more comprehensive understanding of how the landscapes/seascapes influenced human culture and vice versa.

For this thesis, examining how Ocracoke pilots and larger merchant ships interacted with Ocracoke Inlet and surrounding areas will help create a complete understanding of the cultural aspects of life on Ocracoke Island. This thesis will use Christer Westerdahl's concept of maritime cultural landscapes and his concept of "transit points," as well as the work done on St. Eustatius to establish the divisions of different archaeological zones for Ocracoke Inlet and the surrounding areas.

For a more comprehensive development of the archaeological zones, this thesis will adopt Westerdahl's concept of "transit points." Westerdahl defined these points as "the connections with waterways inland and the point where vessel or transportation methods changes (Westerdahl 1992:6). This applies to all zones used to divide Ocracoke, but two in particular, the deep-water anchorage and the near-shore anchorage zones. In both of these locations, the ships had to adapt to the changes of Ocracoke Inlet. In the deep-water anchorage zone, the ships would have to wait for the pilots to take command of the vessel and guide it safely through the inlet. If the vessel's draft was too deep, it would have to enter the near-shore anchorage zone to unload part or all of the cargo onto smaller, shallow draft vessels that could navigate safely through the channel. Analyzing the historical records within the scope of this concept will aid in determining the precise locations of these two zones.

The Outer Banks of North Carolina played a pivotal role in the colonial history of America, and Ocracoke Island was no exception. The remainder of this thesis is dedicated to exploring how the pilots that worked its waterways effected the role of commerce through the

9

region. The next chapter deals with the initial process, the development of the historical record

for the pilots of Ocracoke. The chapter creates this through the use of various primary sources,

including but not limited to the Colonial/State Records and the historic census reports for Hyde

County. The third chapter of this thesis discusses the theoretical framework and the

methodology used in the development and analysis of the work. Explaining the reasons for why

a maritime landscapes approach and how the various resources are used. Chapter 4 is the in

depth analysis of the individual resources and data. This includes the historical records, the

previous remote sensing research conducted on Ocracoke, and historic cartographic information

relating to the North Carolina. The final chapter is the comparative analysis of the various data,

and the conclusions developed pertaining to the research questions and areas for future research.

Chapter 2: History

The common legends and folklore of Ocracoke describe it as haven of piracy, where pirates freely roamed the waterways. While this may be the case, currently there is no evidence supporting such claims, leaving the early history of Ocracoke is vague at best, and scholars know even less of the early pilots that lived there. Leaving the question, could these two groups of people be one in the same. Whatever the case, most coastal communities considered pilots essential to commerce throughout North Carolina. This fact becomes clear when studying the acts and regulations, passed by the governing bodies of North Carolina. Many of the laws created, concerning navigating the North Carolina waters, specifically mention the Ocracoke pilots. These laws governed the pilots and provided insight into the lives of these valuable watermen.

Colonial records show that the pilots first established settlements on Ocracoke in the early 18th century. In 1715, the General Assembly passed the law for settling and maintaining pilots on Ocracoke. The act stated that the Governor or Commander in Chief appoint two people that he see fit and qualified to be pilots; one for Roanoke and one for Ocracoke Inlet (General Assembly 1790 [23]:40). These pilots were required to determine the most convenient way through their respective inlets. Each pilot was to keep a boat in good working order and allowed two people to assist him with piloting vessels. The Ocracoke pilot was responsible for accompanying or piloting all vessels past the shoals, into the open sound, and then giving the ship directions towards their destined river. If weather made it impossible for the pilot to board and take charge of the vessels, then the pilot would have to use signals to guide the ships though the inlet. For his services, the pilot would receive 30 shillings for every vessel that drew six feet or less. He received an additional 10 shillings per foot for vessels over six feet in draft. If any

damages occurred to a vessel while under the charge of the pilot, he was responsible for all repairs/reimbursements. If a pilot wanted to retire from the position, he had to inform the Governor or Command in Chief at least three months prior (Colonial Records 1790 [23]:40&41).

There is no record indicating when the pilots actually arrived on the island and the colonial record does not mention them again until July 1731 in a letter from Governor Burrington. In the letter, he discusses his thought on the act passed in 1715, stating:

> This Act was well design'd for the Encouragement of Trade but of late years has been wholly neglected and tho' all Vessells pay such a sum for powder money which ought to have been for Pilotage, the Publick of late have taken no Care about it. I design to settle Pilots at OcaCock which is one of the best Inletts in the Country into a safe harbor, but shoally afterwards; but large ships may come in there and unlade and lade if such a Regulation could be made (Colonial Records 1790[3]:184).

The Governor also discusses the importance of Ocracoke in his letter to the Duke of Newcastle and urges for the establishment of a port and customs house. He suggested that if the General Assembly grant lands to the pilots, at two shillings for every 100 acres, and the port developed, then it could become one of the best ports in the country. Governor Burrington's pleas had little effect and the assembly did not address the issue of Ocracoke Inlet again that year.

The importance of the Ocracoke pilots to North Carolina trade quickly became apparent to members of the Assembly. They soon began introducing petitions for pilotage, and buoying and beaconing the inlet. The first bill introduced involving pilots on Ocracoke was on November 9, 1734, called the "Act for the better and more effectual encouraging and promoting the Trade of this province" (Colonial Records 1790[3]:642). After the first reading of the bill, the

12

Assembly began to debate about the pilotage. For a better understanding, the Assembly sent for Captain Miles Gale to give his propositions to the House. He was one of the first captains on record to make a formal request to undertake pilotage at and around Ocracoke Inlet. The following Monday (November 12) Captain Miles gave his proposal, and the next day the act was read a second time, passed with amendments, and was sent to the Upper House. The colonial records do not state what these amendments were, nor is there any response from the Upper House that year. (Colonial Records 1790[4]:127-133) Along with Miles Gale, there were six other recorded pilots for Ocracoke Inlet in 1734: James Bunn, David Wallace, John Dixon, Francis Jackson, George Howard, and Lorable Gaskins (Sticks 1958: 35).

In July 1736, Governor Burrington wrote a letter to the honorable commissioners of His Majesty's customs. The main purpose of the letter is to encourage the customs officials to close collection offices of Roanoke (Edenton), Bath, and Currituck and open up one new one on Ocracoke Island. In attempts to persuade the officials, Burrington's letter goes into great detail about North Carolina's involvement in trade between Great Britain, New England, and the Sugar Islands, and also explains how inadequate regulations around Ocracoke Inlet are hurting the economics of North Carolina and Great Britain alike (Colonial Records 1790[4]:170-173).

By this time in the 1730s, Roanoke Inlet was too shallow for large ships to navigate and Currituck Inlet had closed up completely. Therefore, all trade came in at Ocracoke Inlet, then on to the collections house in Bath, Roanoke, and Currituck. However, the lack of authority at Ocracoke allowed illegal trade to thrive. Governor Burrington's correspondences described a 1734 incident when a ship from Guernsey loaded with French wines, brandy, tea, and other prohibited goods came into the harbor at Ocracoke. The merchants transferred goods to smaller vessels and distributed them throughout the Albemarle and into Virginia, without the collection

13

house's awareness (Colonial Records 1790[4]:170&171). A collection house was similar to a customs house. It is where government officials processed paperwork and collected the taxes on goods imported and exported goods.

The Governor continued the letter with an explanation of the military advantage of a collection house on Ocracoke. One small, well placed fort would be enough to defend the entire channel (from the sandbar to the anchoring place and most of the harbor) during a time of war and it would be sufficient security for the harbor and houses on the island. If a collection house was established on Ocracoke along with a fort, not only would it have been possible to stop illicit trade throughout the region, but it would help North Carolina to become a larger part of the trade network between Great Britain and the Sugar Islands (Colonial Records 1790[4]:171). Burrington further elaborated how goods in North Carolina had to be sold to New England merchants first, and then sent on to Great Britain or the Caribbean, causing the North Carolina merchants to lose half their profits. Burrington insisted that a proper port on Ocracoke would promote commerce in this region and extend it throughout the Atlantic (Colonial Records 1790[4]:172&173).

Even though Governor Burrington once again explains the importance of Ocracoke, nothing comes from his letter, as shown by a complaint by Robert Hewn and others to the Assembly in February 1738. They emphatically state that the navigation from Ocracoke Inlet to several ports had become very dangerous. The men go on to petition for the regulation of pilotage, and demand that the channels be marked with buoys and beacons (Colonial Records 1790[4]:384). The outcome was legislation passed in 1738 entitled the "Act facilitating the Navigation of the several Ports of this Province and for Buoying and Beaconing the Channels leading from Ocacock Inlet, to Edenton, Bath-Town and New Bern, and from Top-sail Inlet, to

Beaufort Town and other Ports and Inlets within the said Province herein mentioned; and for providing sufficient pilots for the safe Conduct of Vessels". Unfortunately, the act was repealed in 1748 and omitted from the records, leaving the exact details unknown, such as the number of pilots added (Colonial Records 1790[23]:127).

The first amendment to this act brought before Assembly on April 16, 1745 was to appoint new commissioners, that would "encourage and regulate" the pilots of the aforesaid act (Colonial Records 1790 [4]:784). The Assembly passed it upwards to Council. The amendment came back from Council during the afternoon session of Assembly where it was read for the first time and passed with amendments. The following day the amendment was read for the second time by the Assembly, again passed with amendments and then ordered to be sent to Council (Colonial Records 1790[4}:784&786). There is no mention of the act again in the Colonial Records for that year, suggesting that it never passed into law. However, in 1748, the Assembly repealed the original 1738 "Act facilitating the Navigation of the several Ports of this Province…" again and an act of exact same name enacted (Colonial Records 1790[23]:127,355). The records do not go into the details of the new act.

Whatever the case, the 1748 act was not adequate for the growing importance of Ocracoke Inlet. Due to the "Insufficiency and Neglect of Pilots," the General Assembly passed the "Act for facilitating the Navigation of Port-Bath, Port-Roanoke, and Port-Beaufort" (Colonial Record 1790[23]:375). The act appointed several new commissioners for the ports: three at Bath, three at Beaufort, and five at Roanoke. These commissioners were responsible for keeping all the channels leading from Ocracoke to Bath, Edenton, and New Bern sufficiently staked out. The commissioners also had to assign one or more of themselves to go to Ocracoke and visually inspect the channels and beacons once a year (Colonial Record 1790[23]:375).

15

The act standardized the fees for piloting vessels in and out of Ocracoke Inlet. The charge for pilotage across the bar to Beacon Island was as follows: vessels with a draft under eight feet – 2 shillings per foot, vessels over 8 feet - 2 shillings and 6 pence. Table one lists the fees for pilotage to the various port. Any pilot that charged more than the standardized fee was charged 10 pounds and forfeit any payment they received (Colonial Record 1790[23]:376).

TABLE 1.

FEES FOR PILOTING VESSELS, 1748

	Draft under 6 feet	Draft over 6 feet
Beacon Island to Bath Town	36 shillings flat rate	6 shillings per foot
Beacon Island to Edenton	3 pounds & 12 shillings flat rate	12 shillings per foot
Beacon Island to New Bern	36 shillings flat rate	6 shillings per foot

The government divided the expense of the upkeep for the beacons and channels between the three ports. Port Roanoke paid two fifth of the costs, while Bath and Beaufort equally spilt the remaining three fifths. The assembly created a tax to cover these expenses. The tax varied based on the tonnage of the vessels. A vessel less than 50 tons paid 20 shillings, a vessel between 50 and 100 tons was charged thirty shillings, and any vessel over 100 tons had to pay 40 shillings. Officials collected taxes once a vessel reached its respective port. The General Assembly decided they would enact this act for five years. Afterwards, they terminated the act at the end of the following Assembly session (Colonial Record 1790[23]:378).

As the port became more important, the size of the settlement increased; in May 1753, the local community recognized it as a town. While passing the law establishing the town, the General Assembly also approved the allotment of £2,000 for the erection of Fort Granville at Ocracoke Inlet (Colonial Records 1790[5]:23); however, the money was re-appropriated and the fort was not constructed. Prior to 1753, the Sanderson family owned the entire island. The first Ocracoke pilots technically never had any right to the lands. The area where the pilots lived, known as Pilot Town, became the location of the first town on Ocracoke (O'Neal 1969:6).

In 1764, a storm hit the island and washed away large portions of Pilot Town. By this time, Ocracoke Inlet was the only viable inlet for larger vessels North of Beaufort, and a large number of pilots settled on the island (O'Neal 1969:7). In an effort to retain the pilots, the Assembly passed a law in 1766, purchasing twenty acres of land from the current owners of Ocracoke Island and granted it to the commissioners of ports Roanoke, Bath, and Beaufort. The commissioners in turn leased the land to any Ocracoke pilot that desired land to build a house or haul up their boat. However, the law forbade pilots to maintain any type of livestock anywhere on the island (Colonial Record 1790[23]:670-671). The twenty acres of land added to the settlement expanded it to Cockle Creek, the location of modern day Silver Lake (McAllister 2013:9).

The 1766 act did much more than grant land to the Ocracoke pilots. It completely restructured the laws governing all pilots in North Carolina waters. Pilots operating in North Carolina now required a certification from the port commissioners and current pilots had four months to obtain their certification from the commissioners. Pilots caught working without a certificate forfeited all pay and were charged 20 pounds per offence. To insure "true and faithful

discharge of their duty" pilots had to give a 100 pound bond to the port commissioners (Colonial Record 1790[23]:668).

In this act, the Assembly also updated the 1752 fees for the Ocracoke pilots. The act states that every vessel coming over the bar bound for Beacon Island road had to pay two shillings per foot, if under nine feet in draft. If the vessel was between nine and ten feet in draft, the fee was two shilling and 6 pence. For all vessels with a draft greater than ten feet, the fee was three shillings (Colonial Record 1790[23]:668). The fees for the pilotage from Beacon Island road to the respective ports changed as well. Table 2 lists the charges for the various ports (Colonial Record 1790[23]:668).

TABLE 2.

FEES FOR PILOTING VESSELS, 1752.

	Draft under 6 feet	Draft over 6 feet
Beacon Island to Bath Town	30 shillings flat rate	6 shillings per foot
Beacon Island to Edenton	3 pounds flat rate	10 shillings per foot
Beacon Island to New Bern	36 shillings flat rate	7 shillings per foot

The act also insured that if a vessel refused a pilot, the vessel still had to pay half the pilot fee. On the other hand, if a pilot tried to charge a higher rate than what was set by the Assembly, the pilot would be fined ten pounds (Colonial Record 1790 [23]:668-669).

Aside from standardizing pilot fees, the 1766 act also changed the system for the upkeep and beaconing of the channels, and for the channels out of Ocracoke. Only the Bath and Roanoke

commissioners where now responsible for the upkeep of all markers and beacons. Any vessels that destroyed or tampered with beacons were to be charged 50 pounds per offence. Amended in 1770, the act established a new standard fee for pilotage across the Ocracoke bar towards any of the ports. For vessels with draft less than nine feet, the cost was four shillings per foot, if greater than nine feet it was five shillings per foot. The fee only changed for vessels entering the inlet. The cost remained the same for going out the inlet. The act also established a penalty for pilots that refused pilotage for any vessel. The fine was 20 shillings. And if a vessel was driven off the coast with a pilot aboard, the pilot was paid two shillings and eight pence a day on top of the regular fee (Colonial Record 1790[23]:826-827).

By the 1770s, Ocracoke Inlet was one of the main inlets for North Carolina, and the two largest communities on the Outer Banks were Pilot Town on Ocracoke and Portsmouth on the south side of the inlet. The vitality of the inlet attracted various groups of people, including African Americans: some were freed slaves, others were slaves brought by their owners to work as sailors, lighter crews, and pilots. As an African American, one of the most prized jobs was that of a pilot. The unlicensed black pilots that worked the area quickly became a problem for the local licensed pilots (Cecelski 2001; 48-49). It became such an issue that several of the licensed pilots joined together to petition Governor Josiah Martin and the General Assembly. The list of pilots included John Williams, George Bell, John Bragg, Adam Gaskins, Richard Wade, William Styerin and Simon Hall (Stick 1958: 43). The issue of black pilots at Ocracoke Inlet received little attention by the government, and complaints continued to occur through 1810, even against black pilots licensed to pilot the inlet (Cecelski 1958: 50).

In the years to come, Ocracoke played an important role in the history of North Carolina and the United States. During the Revolutionary War, pilots played critical roles in aiding ships

loyal to the colonies to pass through the inlet, while leaving those devoted to the British stranded. The British fleet neglected the inlet because they thought it to be too shallow and impossible to cross, thus allowing the community to use Ocracoke Inlet for the transportation of merchant and military supplies (O'Neal 1976).

The importance of the inlet is evident in the 1777 act entitled "An Act to regulate the Pilotage of Cape Fear and Ocracoke Bars, and the Rivers leading from the same to Brunswick, Willington, New Bern, Bath and Edenton" (State Records 1790[24]:124-128). The House of Commons introduced and read the Act for the first time in North Carolina State Senate on December 6, 1777. The act passed with no amendments and was sent to the House of Commons. On December 9th, the Senate read the act for the first time, but was amended on the 11th and sent back to the House of Commons, with a letter stating that if the House agreed with the amendments then the Senate would enact the bill (State Records 1790[12]:177-210 & 365-387). The House read and passed the amended act on December 15, and it entered into law on December 24, 1777 (State Records 1790[12]:254).

With the United States only being formed the previous year, there was technically no regulation for pilotage anymore, and several pilots took advantage of this fact (Colonial Records 1790[24]:124-125). Therefore, "The act to regulate the Pilotage of Cape Fear and Ocracoke Bars…" dealt with several issues concerning the pilots of Ocracoke Inlet including the establishment of new pilotage fees. Now any vessel crossing Ocracoke bar going to Beacon Island Road or any other road or harbor where vessels usually anchored had to pay 12 shillings per foot, if its draft was less than nine feet. If the draft was between nine and 11 feet the fee was 16 shillings per foot, greater than that, the cost was 20 shillings per foot.

To enforce the new regulations the State General Assembly appointed new commissioners for the various ports in North Carolina. There were five commissioners for each port at Bath, Edenton, and New Bern, and six for the Cape Fear River area. These commissioners had the task of examining the pilots and their abilities. If any pilots were not fit for their duties, the commissioners had the power to remove them from office.

All North Carolina pilots now had to obtain new certifications from the port commissioners to pilot vessels into their respective ports. The pilots had until 1 February to obtain the new certificates. If a pilot took charged of a vessel without the proper certification, he would be penalized 50 pounds on top of forfeiting the cost of the pilotage. If the pilot could not pay, the penalty was imprisonment for up to three months (State Records 1790[24]:125-126).

In addition, to "insure faithful performance of their duties" the pilots had to pay a bond to the amount of 500 pounds. The use of this money was to pay all damages/injuries that occurred due a pilot's negligence. Furthermore, if a pilot refused his services to a vessel, not deemed an enemy vessel, a fine of 100 pounds was enforced, half of which went to the owner(s) of the vessel, the other half to the informer of the crime. Any misbehavior of a pilot in his office also led to his removal from that office (State Records 1790[24]:125-126).

To encourage people to become pilots, the act of 1777 stated that any pilot that offered his service to a vessel crossing the bar would be entitled to his full compensation, even if a vessel refused his services. Moreover, if a vessel blew offshore with a pilot onboard, he was entitled 5 shillings a day on top of his pilotage fee. In cases such as these, the pilot would have to report the incident to the local naval officer. The naval officer was then required to hold the vessel in port until the pilot received pay, in full (State Records 1790[24]:127).

The act also instated a tax on all vessels that crossed over the Ocracoke bar coming into port. Any vessel less than 50 tons paid 16 shillings and if vessel was over 50 tons, it paid 40 shillings. The tax was to pay for the erection and upkeep of channel beacons and buoys and was collected at its port of destination. The Assembly divided the cost of the channel upkeep between the three different ports (Bath, New Bern, and Roanoke). Roanoke and New Bern each paid two fifths, and Bath paid the remaining one fifth. The port commissioners were empowered to hire one or more persons, for the sole purpose of collecting said taxes. In addition, for their trouble, the State gave the collectors five percent of the taxes they collected (State Records 1790[23]:127-128).

To ensure the safety of the channels, anyone caught removing/destroying any type of channel maker or throwing ballast overboard into a channel within a port was fined 100 pounds per offence; half was paid to the commissioners of the port, the other half went to the informer of the crime (State Records 1790[24]:127-128).

The Assembly deemed that this navigation act was of enough importance that they repealed all other acts, clauses, or clauses of acts that related to pilotage or navigation in North Carolina. The Assembly also stated that it would enforce the act for the entire duration of the "present war" (Revolutionary War) and then carry on until the end of the following General Assembly (State Records 1790[24]:128). As the importance of the Ocracoke pilots rose, so did the dangers involved, causing the amendment of the 1777 navigation act in early 1778. This amendment was necessary because the Assembly deemed the original law insufficient for the services performed by the pilots. Unauthorized people quickly filled the void left by the absence of the licensed pilots, who began causing vessels to "wreck and be destroyed" either through negligence, inexperience, or by design.

The State Records mentions one example of the destruction caused by the licensed/unlicensed pilots. On December 27, 1777, Captain John Sheppard brought a petition before the General Assembly stating that after his ship wrecked near Ocracoke bar, various people living near Ocracoke Inlet stole his personal property along with parts of the ship's cargo. Captain Sheppard urged the Assembly to punish the perpetrators in order to prevent such acts. The Generally Assembly agreed and requested that the Governor issue a proclamation "offering a reward of 50 pounds to any white freeman who will on oath inform the Attorney General of the names and places of abode of all or any of the aforesaid persons" (State Records 1790 [12]:448).

To bring these actions to an end, the amendment stated that starting on the first of June, it will be illegal for any person, including the pilots to take charge of a foreign vessel over Ocracoke bar or into any port in the state, unless the person has obtained a new license from the commissioners of navigation. Any person that causes any damage to a vessel or its cargo while illegally piloting the vessel shall be sentenced to six months in prison and fined 1,000 pounds; payable to the injured party. Furthermore if any inhabitant of the state of North Carolina, without the new license, attempted to pilot a vessel over Ocracoke bar for a fee or reward, they would be fined 500 pounds (State Records 1790[13]:167).

Ocracoke Inlet became even more important to the Revolutionary War in 1778. In a letter to Lord Germain in London, Josiah Martin (former Governor of North Carolina) wrote that the port of Ocracoke "has become a great channel of supply to the rebels, while the more considerable ports have been watched by the King's ships. They have received through it very considerable importations" (State Records 1790[13]:iv). Since Ocracoke Inlet was one of the last remaining viable inlets in North Carolina, the state built a fort on the Portsmouth side of the

inlet in 1777. However, the British never fully grasped the importance of the inlet, and never

sent a blockade fleet to Ocracoke (O'Neal: 1976:7).

This same law also updated the fees for pilotage. As with previous acts, the fees levied

on vessels depended upon their draft. For pilotage over the bar to Beacon Island, under nine feet

was 20 shillings, between 9 and 11 feet was 25 shillings, and over 11 feet was 30 shillings. For

outward-bound vessels, the cost was half the inbound fee. From the lower road to New Bern it

was a flat rate of 12 shillings, and from the lower road to Edenton the rate was 20 shillings (State

Records 1790[13]:168).

The amendment did not have the effect the General Assembly thought it would. It did

put an end to the illegal pilotage, but the danger of piloting became so great that licensed pilots

joined together and stopped piloting all vessels though the inlet. Captain Willis Wilson states

this fact in a letter to Governor Caswell on June 26, 1778, only 26 days after the enforcement of

the original amendment. In the letter, Wilson writes:

>…the pilots of Ocracock have finally stopped bringing in or carrying out
>
>vessels, having entered into an association to that purpose, the reasons they
>
>give me for this extraordinary step is; that having no branches, they are liable
>
>to a penalty for taking charge of any vessel, and that they will not take
>
>branches because the legislature have rated their pilotage at too low a price,
>
>being all in a clan. I fear our trade will be hurt by the infamy of these people
>
>(State Records [13]:171).

It is uncertain when, or if, the Ocracoke pilots went back to working the inlet and there is

no mention of Ocracoke, the inlet, or the pilots in the state records again until 1781. However,

24

the dangers involved with pilotage continued to grow and the General Assembly again amended the 1777 navigation act, in November 1778. The new amendment states that due to the pilots' fears of being 'trepanned' (pressed into service) and carried off by enemy ships, the rates of pilotage needed to change to reflect the dangers involved. This amendment solely focuses on the pilots of the Cape Fear River area, ignoring the issues concerning Ocracoke (State Records 1790[24]:218).

The Assembly introduced the next major legislative act dealing with the pilots of Ocracoke Inlet in 1781. In the few years prior, merchant and locals alike suffered great losses due to enemy vessels capturing ships along sounds and rivers, causing a severe interruption in trade throughout North Carolina. Moreover, the inhabitants of Ocracoke, Portsmouth, and the surrounding areas lived with the constant threat of enemy attacks. To counteract these issues, the General Assembly passed the "Act for protecting and securing the navigation of Ocracoke Bar; and the Sounds and Rivers communicating therewith, and other purpose" (act protecting navigation) (State Records 1790[24]:402). The 1781 act protecting navigation declared that two vessels armed each with 10 to 12 guns, and 75 men, along with two galleys armed with 40 men each, be outfitted for the purpose of protecting Ocracoke Inlet and the surrounding waterways. The State authorized ten new commissioners (five for Edenton, five for New Bern) for the sole purpose of procuring needed equipment and outfitting the vessels (State Records 1790[24]:403-404).

The commissioners were empowered to buy, hire, or otherwise procure suitable vessels and galleys, along with the guns, ammunition, sails, rigging, tackle, and any other materials needed. If the commissioners were unable to buy or hire the needed vessels and materials, they had authority to impress any vessels and materials need into their service. If this was the case,

25

the commissioners had to give certificates to the owners specifying the value of the impressed item(s). The state treasury then had until the first of January 1782 to pay back the owners of the impressed goods (State Records 1790[24]:403) If any of the commissioner met with resistance during his duties, he had the power to call upon the commanding officer of that county and order their assistance with the procurement of required materials.

After the procurement of the ships, the commissioners then had to appoint the officers for the individual ships. For each armed vessel, the commissioners were to appoint a captain, two lieutenants, a master who also served a pilot, a gunner and a boatswain, and 10 seamen. Assigned to the galleys was a captain, one lieutenant, a gunner and three seamen. All the officers were to serve any length of time, not exceeding six months, and paid the following per month: Captains – 12 pounds, lieutenants and masters – 8 pounds, gunners and boatswains – 4 pounds, and seamen – 3 pounds (State Records 1790[24]:403).

To complete the complement of the vessels' crews, the commissioners had to enlist volunteers to serve as marines. The commissioner could appoint as many officers as needed for these marines. If a commissioner could not find enough volunteers, they had to apply to the brigadier general of the district, who sequentially would draft the required men into service. All of these men, whether volunteered or drafted, who served faithfully onboard for three months were then considered as having performed a tour of duty on the militia and granted the same pay as regular militiamen (State Records 1790[24]:403-404).

The commissioners had to apply to the Governor to grant warrants to the treasuries for the money needed to pay the officers and men aboard these ships. Commissioners could also apply to the county commissioners to provide the provisions needed for the ships. They either

bought or impressed supplies as needed and had to keep clear accounts of all the money received

for expenses and expenditures of everything both bought and impressed in service. (State

Records 1790[24]:404).

Once the vessels and men were in place, their orders were to patrol areas within Ocracoke

bar. The commissioners were to inform all the other ships of incoming enemies, so that the

entire fleet could be rallied to defend the area if necessary. In such cases, the commissioners

would then appoint one of the captains as commodore of the fleet, whom the other captains must

then obey, for the duration of his appointment (State Records 1790[24]:404).

After the end of the revolutionary war, the North Carolina General Assembly had to

create a new law concerning pilot regulations and navigation. The law titled "a bill for

facilitating the navigation and regulating the Pilotage of the several Ports of this State" (bill

facilitating navigation) was passed in May 1783. The creation of the bill facilitating navigation

was due to the poor condition of commerce in the state directly related to the "imposition,

extortion, insufficiency, and neglect pilots" (State Records 1790[24]:502). To improve the

conditions, the appointment of new commissioners occurred once again, five for each port at

Bath and Beaufort and six for the port of Roanoke. The main responsibility of the

commissioners was the upkeep of channels. This included staking out channels and placing

beacons, from Ocracoke to Washington, Edenton, and New Bern (State Records 1790[24]:503).

The commissioners also had to cover the expenses of setting up beacons and staking out

the swash of Ocracoke. The Roanoke, Bath, and New Bern commissioners had to divide the cost

between them; the Roanoke commissioner paid two-fifths, while the commissioner of Bath and

Beaufort paid the remaining three-fifths equally. To cover these expenses, all vessels had to pay

a port tax at the respective ports. The taxes for vessels were as follows: under 50 tons paid 10 shillings, between 50 and 100 paid 20 shillings, and over 100 tons paid 30 shillings. Charged with the collection of the taxes, each naval officer of the district appointed as tax collector had to pay 300 pounds to the port commissioners to ensure an honest performance (State Records 1790[24]:502-504).

The bill facilitating navigation also gave the new commissioner the duty of examining the qualification of the pilots and granting them certifications to work in any or all ports. Pilots had three months from the day the law passed to obtain the new certification, and had to pay a bond of 100 pounds to the commissioners of each ports they piloted. In this new bill, black slaves could obtain a certificate, if they passed the examination of the commissioners and their masters paid the bond. The act fined any person that was not a certified pilot that took charge of a vessel 20 pounds per offence and forfeited any payment received (State Records 1790[24]:503-503).

Along with the new regulations, the bill facilitating navigation also determined the fees pilots were able to charge. The new law stated that from outside the bar to Beacon Island the fees were as follows: vessels with a draft under nine feet paid two shillings, between nine and ten feet paid two shillings and six pence, and over ten paid three shillings. The state levied a fine of 20 pounds on any pilot that charged more than the allotted amounts (State Records 1790[24]:503. Table 3 details the fees from Beacon Island to the respective ports.

TABLE 3.

FEES FOR PILOTING VESSELS, 1783.

	Draft under 6 feet	Draft over 6 feet
To Washington	30 shillings flat rate	6 shillings per foot
To Bath	30 shillings flat rate	6 shillings per foot
To Edenton	3 pounds flat rate	10 shillings per foot
To New Bern	36 shillings flat rate	7 shillings per foot

In 1784, the State General Assembly made several changes to the 1783 law facilitating navigation. The first was a new act the purpose of which was to change the cost of pilotage at Ocracoke, Beaufort, and Bogue inlets; the second, an amendment to the 1783 bill affecting only the Cape Fear area. The "Act for ascertaining the Fees of the Pilots at Ocacock, Beaufort, and Bogue Inlets, and for appointing Commissioners of Navigation for Bogue Inlet" (act ascertaining fees of pilots) was passed in May of 1784 (State Records 1790[14]:559,568,574, & 589). The new fees for pilotage across the bar to/from Beacon Island changed to the following: vessels with drafts less than 8 feet paid three shillings per foot, if over 8 feet it was 3 shillings, 6 pence per foot. The fine for piloting vessels without certification from the commissioners of navigation also increased from 20 pounds to 100 per offence (State Records 1790[24]:592-593). The fees from Beacon Island to the respective ports changed to the following, located on Table 4.

TABLE 4.

FEES FOR PILOTING VESSELS, 1784.

	Draft under 6 feet	Draft over 6 feet
To Washington	40 shillings flat rate	7 shillings per foot
To Edenton	4 pounds 10 shillings per foot	15 shillings per foot
To New Bern	40 shillings flat rate	7 shillings 6 pence per foot

The final 1784 amendment to the 1783 act facilitating navigation, passed in late November. The reason for this additional amendment was that it was deemed that the port tax of 10 shillings for every vessel under 50 tons was unfair for the smaller vessels and open boats in the areas. To counteract this, the amendment stated any vessel or boat "whose real burden does not amount to 20 tons or more" should be exempt from taxation (State Records 1790[24]:660-661).

The last major act by the North Carolina State General Assembly concerning the pilots and pilotage was in 1788. The Assembly declared all matters pertaining to "pilots, pilotage, and the preservation of the inland navigation" are now under the authority of "the Judges of the several courts of admiralty in this State" (State Records [24]:960). This meant that the creation and enforcement of all laws and regulations were now determined by the respective districts.

When this act was established, Ocracoke, Portsmouth, and the surrounding islands were all part of Carteret County. Unfortunately, there are no records concerning the Ocracoke pilots during this time period. The missing time is only a small portion of the essential history, because

the decline in commercial navigation of Ocracoke Inlet began in 1846, with a storm creating the much safer Oregon Inlet. The 1850 census report is the first to include occupations of people; prior to this, the question does not appear in any census reports for the Ocracoke area. Based off the 1850 census, there were forty-nine registered pilots in Hyde County, thirty-six of which were located around Ocracoke Inlet (Hyde County Census 1850). For the list of Ocracoke pilots, refer to appendix A. The census report for 1860 has eleven register pilots for Ocracoke and by 1870, there are only five (Hyde County Census 1860; Hyde County Census 1870). Shipping in North Carolina took another hit in the years after the Civil War, and by 1900, Samuel Bragg and James Bragg were the only two registered pilots living on Ocracoke Island (Hyde County Census 1900).

Chapter 3: Methodology

This chapter details the theory and methods involved in the development and analysis of this thesis. The theoretical framework of any research is the foundation or roadmap for approaching the data set. Without a firm grasp of the concept, a comprehensive methodical approach becomes all but impossible.

Theoretical Framework

Research of ports and harbors has always been a small niche within the discipline of archaeology, but it is slowing starting to move to the forefront. The majority of work on this subject matter has focused on technological development and structures rather than the theoretical analysis (Rodgers 2014:183-184). In an effort to create an all-encompassing analysis for Ocracoke, this thesis utilizes the theoretical approach first coined by Christer Westerdahl as maritime cultural landscapes. This approach will help with the assessment and interpretation of the areas of archaeological interest associated with Ocracoke Inlet and the surrounding islands. The maritime cultural landscapes theory provides a unique approach to answering the research questions posed by this thesis. By examining how people interacted with the maritime landscape, it becomes possible to understand how the landscape influenced culture.

Carl Sauer first coined the term cultural landscape as a way to interpret regional settlement patterns that were associated with cultural/social organization. He stated that while natural areas serve as mediums, culture acts as the agent, and cultural landscapes are the results of the interactions between them (Sauer: 1925:46). The concept of a maritime cultural landscape address the cultural landscapes that cross the land/sea divide, and into the seascape. The term

seascape describes any landscape viewed from the sea, including harbors, islands, reefs, etc. (Ford 2011:4).

Westerdahl first developed the concept of maritime cultural landscapes in 1979 as a way to unite the terrestrial and underwater material culture; he defined it as a way that "signifies human utilization (economy) of maritime space by boat: settlement, fishing, hunting, shipping, and its attendant subcultures, such as pilotage, lighthouse, and seamark maintenance." He explained that this approach could be used to analyze past maritime cultural remains on the land, as well as underwater, that are a result of human utilization of maritime space (Westerdahl 1992: 5-6). Westerdahl's theory argues that in the topography of an area, maritime features located near a waterfront are as significant as submerged features, since the entire range of maritime activities offers information on past activities; this includes tangible/intangible, cognitive, and social aspects of an area (Westerdahl 1994:266).

Maritime landscape studies began with examinations of shipwrecks, artifacts, traditions of usage, the natural topography, and toponymy (Duncan 200:21-22). Through the combination of archaeology and history, these early studies have allowed maritime cultural landscape to progress in several different directions, allowing the examination of regions and themes of maritime culture, geomorphological processes within archaeological landscapes, and ethnography to "illuminate the cultural and social relationships between communities and the environment" (Duncan 2006:11; Jones 2012:23).

Over the past two decades, this approach has grown far beyond that initial concept and developed into a widely diverse theoretical approach, with many various applications (Ford 2006, Duncan 2000, Stanbury 1983, Westerdahl, 1992, 1994, 1998, 2011, Hunter 1994, Parker

2001). However, all have the same underlying intention that focuses on the interaction between humankind and the water (Ford 2011:60).

The predominant trend in maritime archaeology attempts to see "the shipwreck as but one integral part of a continuum of maritime heritage sites, on, in, around, and under our waters" (McCarthy 2003:25). Each site can be "regarded as a discrete archaeological entity, having its own specific cultural attributes and fixed place in time, its relative value in the understanding of a particular sequence of events increases considerably when linked to a broader archaeological or historical context" (Stanbury 1983:261). Maritime archaeological sites do not consist solely of shipwrecks, which do not alone signify the presence of a seascape. Sites also include other archaeological evidence, and finds may delineate and elucidate a seascape for a particular area (Duncan 2000: 141-142). These components are "no more than extension or reflections of the broader culture to which they belong and are integral rather than isolated economic or social elements" (Hunter 1994:262). The relationships between underwater sites and terrestrial sites enhance knowledge of human activities and relationships with the sea and the coast (Stanbury 1983: 261).

Expanding from Westerdahl's original idea, Ben Ford created an in depth concept of seascapes and maritime landscapes. Ford explains seascapes as being a construct of factors that allow an individual to perceive their location based on the cultural meaning of the factors (i.e.: stars, currents, swell, clouds, etc.). Ford also explains maritime cultural landscapes as a combination of the physical aspects of the landscape and seascape used to analyze the culture of maritime people within a spatial context. This approach joins the maritime history and ethnography with the physical remains (shipwrecks, ports, harbors, villages, etc.) of past maritime cultures (Ford 2011: 4-5). This interpretation of "how people perceived and

34

understood the sea and used this knowledge and understanding to order and constitute the

landscape and societies that they live in" (O'Sullivan and Breen 2007: 15), allows maritime

cultural landscape theory to not only extend beyond shipwrecks, but also allows shipwrecks to be

studied as features of a larger site. This creates a more comprehensive understanding of how the

landscapes/seascapes influenced human culture and vice versa.

Jennifer McKinnon conducted a similar study, researching the importance of the sea to

the indigenous community on the island of Saipan in the Mariana Islands. McKinnon collected

data from various sources. The project worked in conjunction with the Indigenous community in

order to understand their connection with the sea, while testing a seascape approach. Through

the examination of archaeological sites and oral and written histories, McKinnon studied the

indigenous access points to the water and navigational features in order to identify the

connections between the local community and the sea. While the focus of the article is the

connection between the community and the sea, it also reveals that some key terrestrial

archaeology sites should be consider part of the seascape.

Another example of the practical application of maritime cultural landscapes is Brad

Duncan's (2006) Doctoral thesis, *The Maritime Archaeology and Maritime Cultural Landscapes*

of Queenscliffe: A Nineteenth Century Australian Coastal Community, in which, Duncan

develops a new methodological approach to the archaeology of maritime landscapes. Only

accomplished through exploring a range of data sets within the same kind of analytical

framework, "to enable comparison of diverse landscapes" (Duncan 2006:70).

With these previous studies as a guide, this thesis can conduct an analysis of the data sets

collected on Ocracoke. The first stage of the analysis involves examining the history of

Ocracoke, focusing on the value the maritime community placed on the pilots. The next stage requires the examination of the Ocracoke Shipwreck Database to determine any spatial or temporal relationships in the archaeological data. The final stage in the analysis compares the historical and archaeological data with the statistical findings in order to determine the role pilots had in the maritime community of Ocracoke.

Within the parameters of this thesis, the analysis of the historical record and the various wrecking events associated with Ocracoke Inlet, though the lens of the maritime cultural landscapes approach will aid in the creation of a predictive model of archaeological sites for Ocracoke/Ocracoke Inlet. The use of maritime cultural landscapes theory with this type of practical application has been used by Ford, McKinnon, and Duncan (mentioned above), and with the original usage/settlement of Ocracoke was solely for the piloting vessels though the inlet, this approach is justifiable. Subsequently, if the direct use of the inlet is what caused the settlement of the island, then the preliminary approach for archaeology is though the analysis of the inlet. Creating a better understanding of the use of Ocracoke Inlet throughout history, will in turn shed light on the cultural landscapes of Ocracoke, showing how, why and where maritime infrastructures would have been located.

This thesis will use Christer Westerdahl's concept of "transit points" as well as the work done on St. Eustatius (a Dutch island in the Caribbean, with a similar background of Ocracoke) to establish divisions of different archaeological transit points for Ocracoke Inlet and the surrounding areas. Westerdahl defined transit points as "the connections with waterways inland and the point where vessels or transportation methods changes (Westerdahl 1992:6). Analyzing the historical records within the scope of the maritime cultural landscape concept will aid in determining the precise locations of these transit points or "zones".

Archaeologists conducted similar research on St Eustatius. Using the historical record of St. Eustatius, they were able to divide the island into several different archaeological zones, including an offshore anchorage zone, an inshore scatter zone, and the lower and upper town zones. The offshore anchorage zone is an area where wreckage of ships are likely located. The inshore zone is where spillage of the goods from the ships at anchorage is most likely to be. The lower town zone consists of the harbor store and warehouses, whereas the upper town zone is where the homes of the locals can be located. These specific research zones allowed archaeologists to further research and focus on individual topics, while keeping ties with the overall history of the island (Dethlefsen at el. 1982).

The predetermined transit points are as followed: deep-water anchorage zone, Ocracoke channel zone, near-shore anchorage zone, and Pilot Town zone (figure 2). The deep-water anchorage zone consists of the area where the large merchant ships would have to anchor and wait for the pilot boats either to take on the merchant cargo or navigate them through the channel. This zone is where the largest number of shipwrecks are likely located. The Ocracoke channel zone is the area where the historic channel is located. Since larger vessels could not navigate the channel, the artifacts in this area will most like represent pilot boats. The near-shore anchorage zone is similar to the inshore zone on St. Eustatius. Here is where the remains of any harbors, wharfs, and docks should be located. The Pilot Town zone consists of the area where the original settlement would have been. The majority of any archaeological information discovered in this zone would reflect the daily life of the pilots.

The concept of archaeological zones created by SECAR is incomplete without a strong theoretical framework. The established framework within maritime cultural landscapes, and the overlapping concept of transits points, provides the theoretical concepts needed to complete the

approach of the research in this thesis. Combining maritime cultural landscapes with transit points and the similar concept of the archaeological zones used on St. Eustatius will allow for the development of a predictive model to focus future research in the area. The zones can be considered the broadest range of human interaction with the area, while the transit points are considered the focal point of interaction and will mostly be the areas of high interest for future studies.

FIGURE 2. Adapted satellite image displaying archaeological zones (Google Earth, 2015)

Methods

In order to examine the role pilots played in facilitating the safe navigation of Ocracoke Inlet during the Colonial Period, a research methodology was needed that allowed for a comprehensive analysis of the various resources within the scope of a maritime cultural landscapes approach. This section will discuss the specific resources and methods used in this

analysis. The first section defines the parameters of this thesis. Next, it was essential to create a detailed historical timeline, tracking pilotage on Ocracoke. The third section discusses the archaeological resources used in the development of the analytical approach of this thesis. The final section of this chapter describes the statistical and spatial data connected with the analysis of Ocracoke Inlet and the surrounding areas.

The primary objective of this thesis is to determine any impact pilots had on navigation through and around the inlet, by using maritime cultural landscapes to create a predictive model for site locations both on land and underwater. Ocracoke Inlet's influence on maritime history can be determined by tracing events to the earliest parts of the colonial period. It was the *only* inlet utilized into the present day period. In order to create a practical dataset within the parameters of this thesis from such a large timeframe, the author scaled the focus of the historical resources.

The historical record shows that European explorers located the island during Sir Walter Raleigh's expeditions (Newell 1987: 5-13). However, Ocracoke did not become a major part of maritime trade routes until 1715, as suggested by the establishment of pilots on the island by the General Assembly. For the greater part of the 1700s and into the 1800s, Ocracoke Inlet was the major inlet for maritime commerce in North Carolina. When Currituck Inlet closed in 1828, it left Ocracoke Inlet as the only remaining viable inlet between Charleston and Chesapeake Bay. All maritime trade in North Carolina would now have to go through Ocracoke. The vital importance of the inlet to commercial shipping dropped considerably in 1846, with the opening of Oregon Inlet, and was the demise for Ocracoke Inlet. While the population on Ocracoke slowly expanded during the 18th and 19th centuries, by the year 1900, there were only two

recorded pilots still living on the island. Given this information, this thesis focuses on the timeframe between 1715 and 1846.

Source Materials

This section will discuss the various sources used for this thesis. There is a wide variety of sources available for a maritime cultural landscape analysis. These include, but are not limited to, historical documents, cartography, and archaeological remains. The different source materials have their own strengths and weaknesses, however the combination of the information within various sources allows for a holistic view of the subject matter. The following collection of sources led to the development of the maritime landscape analysis for this thesis.

Historical Sources

This thesis consulted various resources, in order to create a chronological history for Ocracoke Inlet's pilots and navigational laws. While developing the history of the Ocracoke pilots, the author discovered a scarcity of information pertaining to pilots in general. Few secondary sources mention them in passing, but none gave any sort of detailed accounts. Most accounts only mention their establishment on the island in 1715. This being the case, the large majority of historical data came directly from primary sources, such as governmental correspondences, legislative documents, and wreck reports. The development of the history chapter of this thesis was through the accumulation these documents.

The best resource for these primary documents came from the Colonial and State Records of North Carolina. Copies of these records are located in the North Carolina State Archives, as well as the North Carolina section of Joyner Library at East Carolina University. The Colonial

and State Records are an assemblage of legislative documents and materials covering North Carolina's establishment as a colony through the ratification of the United States Constitution.

After an exhaustive search of the records, the author compiled and sorted any and all documents mentioning pilots and pilotage, chronologically. The author reviewed then removed the few entries not pertaining to the general Ocracoke area from the collection. The main focus of the entries dealt directly with the regulation of the pilots, and the establishment and upkeep of channel markers and navigational beacons. Though the information did not include any details about the lives of individual pilots, the history of how local governments and regulatory authorities approached the navigational issues of Ocracoke Inlet can and do provide insight vital for answering the questions raised in this thesis. The laws and regulations created dealing with pilots directly relates to the necessity and perceptions of the pilots. A comprehensive review of these documents demonstrations how and where Ocracoke needed pilots.

Several secondary sources pertaining to the history of Ocracoke Island were useful and provided valuable understanding as well. A few of the key secondary sources used in this thesis are*: Dare County: A Brief History* by David Sticks (1970), "The Seacoast in North Carolina History, 1762 – 1789", from the North Carolina Review (Crittenden, 1930), *The History of North Carolina, from the earliest period*, by Francis Martin (1892), and "Ships and shipping in North Carolina 1763 – 1789" written for the North Carolina Review (Crittenden, 1931). However, there has not been anything written exclusively on the pilots of Ocracoke. Nonetheless, secondary sources like these are useful for understanding the history of the island. A general understanding of the overall history is required in order to create an informed hypothesis within the scope of this report.

One of the secondary sources that was particularly helpful was Samuel Newell's (1987) Master's thesis *A Maritime History of Ocracoke Inlet, 1854-1783*. Newell's thesis is a detailed account about the area's history from early European exploration through the end of the Civil War. While Newell's thesis does not go into great detail about the pilots, it does provide a detailed history of the island, providing additional context for the primary sources used in the creation of the historical timeline within this thesis.

Other primary sources utilized in this thesis are the contemporary charts and maps of Ocracoke Inlet. These maps depict the usage of the inlet, the historic channel positions, and the changes over the years. Contemporary maps and charts show how pilots and merchant vessels interacted with the landscape. As with all historical documents, maps contain biases; but even incorrect and absent information is valuable to understanding what was known of the area and how the landscape was used (Duncan 2006:47). The maps and charts can also interpret the geographical changes of the area, such as movement of sandbars or shoreline changes. Furthermore, these maps can show cultural changes in the area, depicting navigational markings, harbors, wharves, and location of settlements and towns. An understanding of these critical points will help determine navigation policy and procedure of the pilots.

This thesis used a compilation of 20 maps, dated from 1590 to 1854, in the spatial analysis of Ocracoke Inlet. The author collected the maps from several sources, including *Mapping Virginia* by William C. Woodridge (2012), NOAA's online Historical Map (NOAA, 2016) and Chart Collection, and the University of North Carolina's North Carolina Maps website (University of NC, 2016). The author selected the chosen maps for this study based on the creation dates, with one map chosen for every decade within timeframe of this thesis. One of the

earliest maps depicts an "accurate" view of North Carolina coast. Another factor in the selection process was the amount of detail to the illustration. All maps used are located in appendix B.

To conduct the analysis, the author reviewed each map, looking at key factors such as the amount of detail given to the area, any illustrations that appear, iconography depicting the locations of towns, roadways, and navigational markings. These factors show how people interacted within the area; when comparisons are made between the various maps, it becomes possible to determine the changing landscape affected the pilots and the trade patterns of the area.

Archaeological Sources

Even though there is very little research conducted on Ocracoke Island, the archaeological potential of the island and adjoining inlet is not a new concept. Ocracoke has a history record filled with stories of shipwrecks all along its beaches. The main hindrance for archaeologists is the dynamic landscape of the barrier island. The constant shifting of the sandbar and channel is not only a geographical hazard, but also has the potential to destroy any archaeological remains.

The main source of archaeological data comes from the remote sensing survey conducted by the Program in Maritime Studies at East Carolina University between 2002 and 2005. Working with a grant from NOAA, the research teams conducted remote sensing surveys in order to "assess the scope of existing archaeological resource" (Runyan 2005: 1). The survey focused mainly around Ocracoke Inlet, due to the large number of wrecks in the area associated with the historical record. Teams conducted surveying during small timeframes of 2003, 2004, and 2005.

After completion of the survey, the research team compiled the data collected into a report for NOAA. The report detailed the research and survey methods used during the project and briefly described the finding. However, the project focused mainly on the collection of the data as used for "practical experience in training the next generation of maritime archaeologists" (Runyan 2005:142). It appears that the team's primary goal was the collection of data as part of a training exercise or students, rather than to answer specific research questions or publish. Over the years, the information was scattered and a detailed archaeological analysis never accomplished.

Databases provide information in a concise manner, making them a central part of analyzing site data. However, without any analysis, a database is simply a collection of numbers with little meaning. By using databases, like the one from the Ocracoke shipwreck survey, it is possible to pose specific questions and examine large-scale data. With the events and processes associated with site formation are well understood within the field of maritime archaeology, it allows current and future research to apply the basic elements of site formation processes to a maritime landscape approach, without the need of individual site investigations for every site in the area of interest.

After reviewing the information from the Ocracoke 2003 and 2005 field reports, it became apparent that the Ocracoke Shipwreck Database was missing. In an effort to retrieve the data, the author contacted the principal investigator (Dr. Timothy Runyan) and the co-principal investigator (Frank Cantles) via email. Frank Cantles made the original database and GIS data available. With the GIS data being thirteen years old, the author took the data to the GISci Center Lab at East Carolina University. The lab technician there manipulated the compatibility of the data to work with the newer version of ArcGIS (10.3.1). During this process, the

technician did not compromise any of the information, only updating the base map, and reapplying the original NOAA Chart (11555) used as an overlaid map.

With the database and GIS data operational, evaluation of the data began. This processing took several different forms including comparing the spatial data from the survey with the location of known wrecks. Queried through various parameters, such as wreck location, year lost, decade lost (for both the overarching timeline and the thesis specific timeline [1715 – 1846]), vessel type, etc., the data from the Ocracoke Shipwreck Database, along with the shipwreck files from the UAB, created various charts depicting the statistical analysis. This allowed comparison of the archaeological record to the historical record, and in turn lends insight into the role/impact of the pilots. To make these comparisons the author developed the information in the database into several charts and graphs, allowing statistical analyses.

Data Analysis

The main influence behind the concept of this thesis was the initial maritime research from St. Eustatius. Using the historical record of St. Eustatius, archaeologists were able to divide the island into several different archaeological zones. These zones were part of a predictive model for future archaeological investigation, in an effort to further research and develop individual topics (Dethlefsen at el. 1982).

The report led to the development of maritime archaeological research on the island. The first study, a College of William and Mary field school, began in late 1982 with a visual survey of the harbor. Various field schools occurred the subsequent years, and in 1986, the Program in Maritime Studies' field school conducted a magnetometer survey of Oranje Bay (Bequette 1988:787).

Archaeologist are still conducting research on St Eustatius. The St. Eustatius Center for Archaeological Research (SECAR) conducts most the research through its field schools. As of 2014, SECAR's research focused on remote sensing surveys to map the area of the sea floor surrounding the island, with the objective of creating an underwater archaeological map to aid with future research of the island (Ruud Stelten 2014 pers. comm.).

The histories of St. Eustatius and Ocracoke are very similar. Both had crucial but relatively short roles in the development of their surrounding areas. Furthermore, both became remote, quiet islands with archaeological significance. These similarities suggested that a predictive model of Ocracoke might aid with the future research on Ocracoke Island.

Chapter 4: Analysis of Data

This chapter examines the Ocracoke region within the realm of the various sources detailed throughout this thesis, in order to identify the role of pilots and their presence on the cultural landscape. The island of Ocracoke has roughly 10 miles of shoreline, and over 400 historically and archaeologically known shipwrecks associated with the region. The analysis in this thesis will have two parts. The first is a broad analysis of the usage of Ocracoke Inlet, to determine any cultural and historic patterns. The second part consists of a detailed examination of the timeframe specific to the pilots on Ocracoke.

Examining the overarching historical significance will aid in a better understanding of the perception of the region within the timeframe in question. This process starts with the examination of the historical data and leads into the analysis of the archaeological and cartographic data. With the comprehensive knowledge of the area, the final assessment of the Ocracoke pilots will be viable.

To complete this assessment, the researcher will combine the statistical and spatial data in a variety of ways. A general timeline relating to the pilots will be developed. Comparing the historical information provided with the archaeological and cartographic data allows for determining when these pilots were on the island and possible impacts these pilots had on the cultural landscape.

For a fully detailed analysis, the researcher examined the various sources separately. The different analyses will dissect the information in these resources to provide critical statistical and spatial data of Ocracoke during the timeframe in question. With the data from these examinations, a comparative analysis will follow.

Historical Analysis

With the compiled history created for the Ocracoke pilots, the next step is to examine and extract information about how the General Assemblies regulated and enforced navigational laws for Ocracoke. This will aid in determining the usefulness of pilots and the authorities' views of the issues and problems. The development and enforcement of laws have a direct correlation with issues that were important to the colonial authorities at the time. It will serve as a mirror of their concerns and priorities related to the pilots' role in the transportation and navigation so important for commerce. The General Assembly passed the law that settled pilots on Ocracoke in 1715. However, the historical record also suggests that the law was never really enforced. Proof of this appears in the 1731 Governor Burrington letters, in which Burrington states that the act has been neglected; vessels are paying the established tonnage fees, but were not receiving pilotage though the channel. This letter intimates that either pilots were not on the island or they simply ignored their duties. There is no mention of any penalties for a pilot not offering his services, which very well may be the case here.

Governor Burrington knew the value of Ocracoke Inlet and wanted to establish a port and customs house on Ocracoke Island, even going so far as suggesting the closure of customs houses at Roanoke, Bath, and Currituck in letters to the customs commissioners. The governor also mentions the illegal trade issues in the area, due to any lack of authority. This combination of information suggests that by the 1730s "pilots" were on the island, but with no form of regulation or enforcement in place, allowing them to do as they pleased. This idea forces the question of whether or not the pilots were in fact the "pirates" historically associated with this region at the time. Exploration into this question will be part of final analysis of this thesis.

In the same letter, Governor Burrington notes the military advantages that Ocracoke offered: how a single fort would be enough to protect the harbor during times of war. Based on the information in his letter, the governor was trying to make North Carolina a larger part of the Atlantic trade network. In order for that to happen, he knew that Ocracoke Inlet would have to play an essential role. Unfortunately, the General Assembly did not answer Governor Burrington's requests. In 1738, a few years after the governor's letters, new laws for the regulation of pilotage at Ocracoke arose due to the hazards of the waterways. However, an act in 1748 repealed and replaced them, again because of the insufficiency and neglect of pilots. The 1748 laws are where the first true steps for regulating the inlet occur. The appointment of commissioners, along with the establishment of penalty fees, brought some form of accountably to the pilots. Around this same time, the settlement on Ocracoke began to increase and the General Assembly approved the erection of Fort Granville, but its construction never happened. Even though they never built the fort, its approval by the assembly shows the rising importance of the inlet.

By this time in the history, it is beyond question that pilots established themselves and their families on Ocracoke. Furthermore, the shift in the type of laws validate such a claim. In an effort to keep the pilots on the island after a storm washed away a large part of Pilot Town in 1766, the General Assembly purchased twenty acres of land from the family that owned the island. The assembly granted the land to the commissioners, who then leased it to the pilots. They allowed pilots to build homes and haul their boats here, but forbade them to own any livestock. One can interpret the act of forbidding the pilots to own livestock as a way of regulating the pilots' activities by not allowing them an alternative means of income, while at the same time discouraging any type of competition with the land owner of the island.

The same law that facilitated the purchase of the land for the pilots also updated the laws and fees for pilotage. Pilots now had to obtain a certification from the port commissioners, and pay a 100 pounds bond. This law also guaranteed pilots half their fee, if a vessel turned down said services. The shift in the type of laws suggest that pilots were not neglecting their duties and are an essential part of the maritime trade in the region during this time. The 1766 act also provided insight into the importance of Ocracoke Inlet itself. For the first time, laws are protecting the inlet. The port commissioners become directly responsible for all channel markers and beacons, and implement fines for the destruction of markers and beacons.

Ocracoke Inlet proved to be valuable during the Revolutionary War. The British believed the inlet to be unusable and left it mainly unguarded, allowing merchants to transport goods and military supplies. A newly formed United States meant that the previous regulations on the pilots no longer applied. The pilots quickly took advantage of the lack of authority, which forced the State General Assembly to deal with the "issues concerning pilots of Ocracoke Inlet." The assembly passed an act in 1777 mirroring the previous laws.

However, the Act still lacked enough incentive for certified pilots when compared to the dangers involved during a time of war, including the fear of press gangs. The void of certified pilots quickly filled up. In addition, reports of these pilots causing wrecks quickly rose and in early 1778, the State Assembly amended the previous act. The new laws enforced a fine of 1000 pounds and six months in jail for anyone that damaged a vessel while illegally piloting it. The Act imposed a fine (of 500 pounds) on persons caught working without a valid piloting license. The act took several steps to deter illegal pilotage but did nothing to encourage legal pilots. The dangers to pilots eventually became so great that the pilots stopped all pilotage for the inlet, and began their so-called strike.

It is unclear when the licensed pilots went back to work. Nevertheless, it is clear that they played a vital role during the war. Ocracoke was the only inlet not heavily guarded by the British, and passage through it was only possible with pilots. Captain Willis Wilson's letter to the governor about the Ocracoke pilots, hints to this when he says, "I fear our trade will be hurt by the infamy of these people." (State Records [13]:171)

The historical records suggest that commerce through Ocracoke Inlet never fully recovered from the pilots' strike. In 1783, the assembly passed new regulations that pertained directly to the imposition, extortion, insufficiency, and neglect of pilots. The law appointed new port commissioners, established new taxes for vessels, and increased pilotage fees. In 1784, the fees for Ocracoke pilots changed again. It was unequally demanding for smaller vessels in the areas. The amendment, focusing on vessel of twenty tons or less, suggests that small vessels were now the majority of commercial traffic in the area, and that the larger merchant ships no longer used Ocracoke inlet.

The historical record of Ocracoke pilotage reaches a dead end in 1788, when the State General Assembly declares all matters pertaining to pilots and inland navigation under the authority of the district courts. This lapse in the historical record is where the other source material will be of the most importance.

Ocracoke Shipwreck Survey Analysis

The first step in the data analysis of the Ocracoke Shipwreck Survey project is the examination of the original methods used for collecting and presenting the data. Researchers compiled the majority of information from the survey in two field reports prepared for National Oceanic and Atmospheric Administration (NOAA). In 2002, the Program in Maritime Studies at

East Carolina University, in collaboration with NOAA, began the Ocracoke Shipwreck Survey project with the goal of exploration and discovery of submerged cultural resources between Cape Hatteras and Cape Lookout. The project primarily focused on Ocracoke Inlet, due to its historical significance during the colonial period. The project ran from 2002 to 2005, and by the end, it had compiled a list of roughly 2,000 shipwrecks within the area of interest (Runyan, 2015: 2).

During the first steps of the Ocracoke survey project, the Program in Maritime Studies created a database of the shipwrecks between Cape Hatteras and Cape Lookout. The database was a compilation of various sources including records from the Underwater Archaeology Branch (UAB) of North Carolina, the National Archives, and the Navel History Center in Washington D.C. Other sources included NOAA's Automated Wreck and Obstruction Information System lists, the Outer Banks Historical Center, and the North Carolina State Archives (Runyan, 2015: 1).

To create the database, several data sets were included. To incorporate as much information as possible, these fields included vessel name, date lost, location of wreckage (if known), cause of wreck, and position accuracy. Many of the entries in the database are incomplete, due to the lack of information in the primary sources. Most sources provided small pieces of information, such as the circumstances of the loss or construction details (Runyan, 2015: 72-75).

Within the primary survey area (Cape Hatteras to Cape Lookout), the database identified roughly 1500 ships that were lost or reported to be in distress. The majority of the losses were concentrated in the inlets, shoals, and beaches of the area. With the full list of shipwrecks

compiled, the next step was the identification of possible target locations. To determine the possible locations, as well as the accuracy and quality of the shipwreck positions the original research team divided data into different categories, and ranked by position accuracy. The position categorization allowed for the systematic study of the wreck locations (table 5). Of the roughly 2000 wrecks identified, 1437 had specific or general positioning information available, of which only 435 fell into the first three categories of exact, known, and specific.

The shipwreck files at the UAB use a category that organized wrecks based on the geographical location within a particular body of water. The UAB based the categories on the general location of the shipwreck linked to the historical descriptions. In the Ocracoke shipwreck database these categories allowed the study of shipwrecks by region rather than individually. The two categories associated with the Ocracoke region are OKI (Ocracoke Inlet) and OKB (Ocracoke Beach) (Runyan, 2015: 74). The category OKI indicates all wrecks that are located within a one-mile radius of Ocracoke Inlet. The category OKB denotes all wreck located within the three-mile range of Ocracoke Island (Chris Southerly, pers. comm.).

TABLE 5.

CATEGORIES OF POSITION ACCURACY (Runyan, 2005)

1. Exact: Verified known site with latitude/longitude or UTM 2. Known: Latitude/longitude recorded, but site not verified 3. Specific: Latitude/longitude determined by verbal description of vessel's location based on distance and direction from a known point at time loss (i.e. lighthouse.) 4. General: Location of wreck can be placed within a body of water, based on general area description from second had sources. 5. Uncertain: Vague location description only (i.e. off NC coast) or has conflicting references about wreck location.

Geographical Information System and Survey Equipment

With the database compiled, analysis of the information through a Geographical

Information System (GIS) began. The original research team used the software ArcView GIS 3.2

by ESRI. The team overlaid the distribution of the 435 shipwrecks that associated with the first

three positioning categories onto the NOAA chart 11555 (figure 3). Once overlaid, the data

displayed the distribution of shipwrecks in categories 1 – 3 (table 5). The number and

concentration of shipwrecks in this information led to the development of seven potential survey

blocks, labeled A – G (Runyan, 2015: 95).
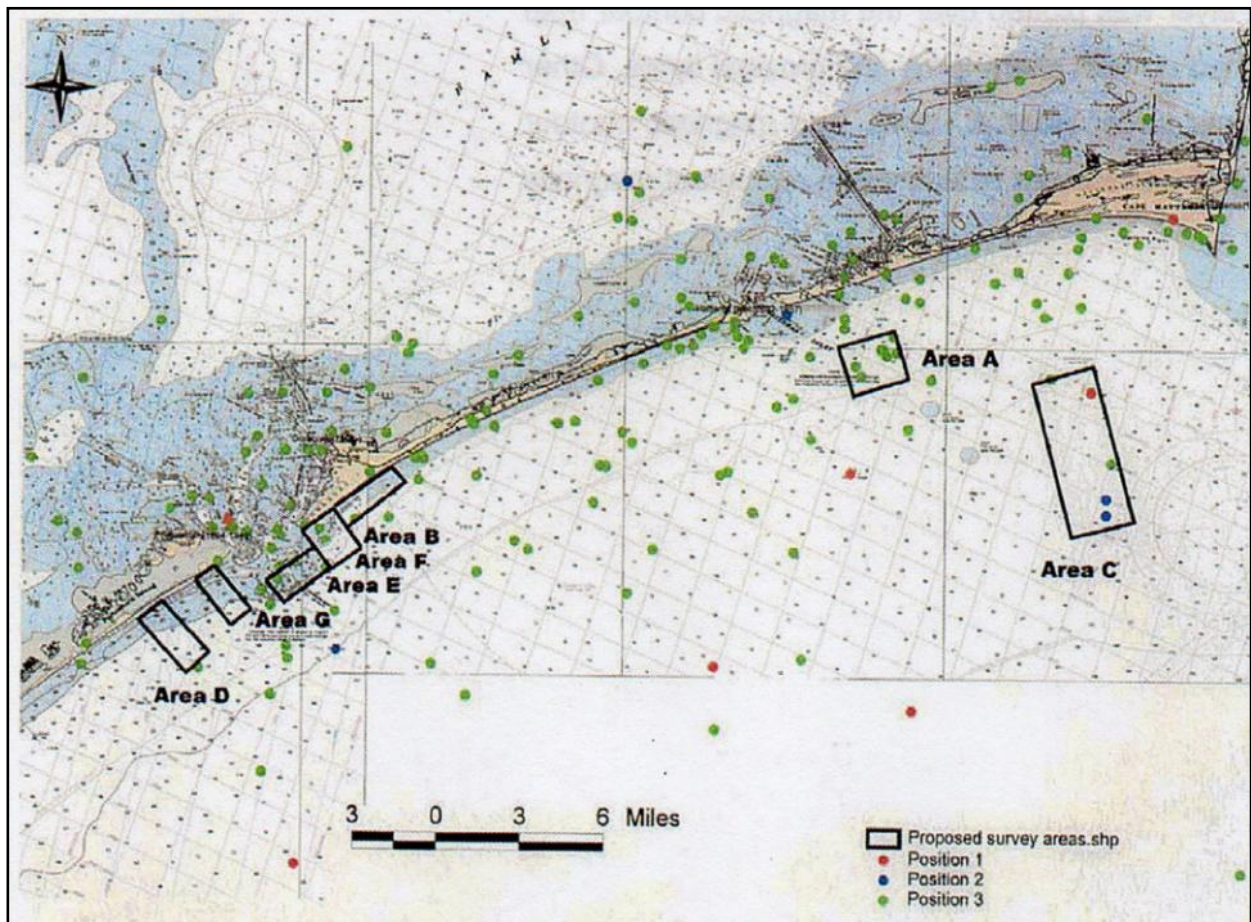
FIGURE 3. Image of search areas from 2005 Ocracoke survey (Runyan 2005)

The Maritime Studies Program at East Carolina University conducted a six-day remote sensing survey in 2003 on area B and a two-day survey in 2004 focusing on area D. Both surveys used a Geometrics 886 magnetometer and a Marine Sonics 600 kHz side-scan sonar. A Garmin 225D GPS provided the positioning coordinates for both the side scan and the magnetometer. Hypack Max Hydrographic software tracked and collected the magnetometer and GPS data, recording the location (in UTM and latitude/longitude), date, time of day, and any magnetic reading. The research team removed any anomalies, such as buoys, using Hypack's Single-Beam Editor program (Runyan, 2015: 55).

In 2003, the team deemed survey area B to be too dangerous for surveying and adjusted the area 1930 meters to the northeast. The team chose the new location for area B due to the historic sailing directions for entering Ocracoke Inlet: sailing south, adjacent to Ocracoke beach. The adjusted survey area was to cover 4.5 square kilometers, with 78 individual survey lanes spaced at 20-meter intervals. Due to heavy seas and limited time, only 35 lanes were completed (Runyan, 2015: 96). The 2004 survey focused on a small quadrant in area D, measuring 1000 square meters, with 41 survey lanes spaced 25 meters apart. Due to time constraints, only 36 survey lanes were completed.

In 2005, East Carolina University contracted Diversified Wilbanks Inc. for a five-day survey project. During the five days, the company surveyed areas E, F, and G. The survey used a Klein 3000 side-scan sonar, a Geometrics G-882 and a Starlink Invicta 210 GPS. The survey team collected and edited the 2005 magnetometer data in Hypack Max, while Klein's SonarPro collected all sonar data (Runyan, 2015: 120).

Area E measured 3201 meters by 1711 meters, with 58 lanes spaced at 30 meter intervals. Area F measured 2130 meters by 3188 meters and had 107 lanes with a 30 meters interval. Area G was 1619 meters by 3399 meters, had 114 lanes, of which only 42 where competed before running out of time (Runyan, 2015: 124 - 130). The following sections discuss the results from the three field seasons. The thesis will not discuss the survey conducted in area G, as the team recorded only two survey lanes. Such a small survey cannot be an accurate representation of said area.

Results from Survey Area B

The data obtained from area B included 12 magnetic anomalies within the Survey area. The twelve anomalies divide into three distinct concentrations. The largest grouping (containing six anomalies) is located in the northeast section of the survey area. All of the anomalies are within one-half mile of the current coastline, and are located within a half-mile radius of one another. The research team recorded the various anomaly sizes in meters, ranging from 40m to 860m. Two of the anomalies within this group are relatively close to a wreck that appears on the NOAA chart (11555) used during the survey, and possibly relates directly to wreckage associated with that wreck.

The next largest grouping (containing five anomalies) is located in the southwest region of the survey area. All the anomalies in this group fall within one-half mile of the coastline as well. However, two of the anomalies are located on the edge of the survey boundaries, and suggest there is more to this group outside the survey area. There are no identified wrecks associated within this area of the survey. The anomalies in this group range from 24m to 130m in size.

The final grouping contains only one anomaly. It is in fact a cluster of several smaller anomalies located towards the center of the survey area. This grouping spans across 500m and is less than one-half a mile off the coastline.

The data from area B also identified 32 sonar targets. The surveyors clearly defined several of the targets as manmade, based on their association with the location of known wreck sites. However, no ground-truthing occurred on any of the targets, making positive identification impossible. Despite the lack of identification, the sonar data can still offer valuable information, especially when compared to the magnetometer data.

When the locations of the sonar data is compared to that of the magnetometer data, two areas of interest appear. The first correlates with the location of the unidentified wreck on the NOAA charts, positioned along the shoreline of Ocracoke. The second location appears in the southwest quadrant of the survey area. In both locations, strong magnetometer anomalies overlapped with sonar targets appearing to be manmade. Further studies on both areas would be highly beneficial.

Results from Survey Area D

The results of the survey conducted in area D contained 19 magnetometer anomalies and four sonar targets. The 19 magnetometer anomalies divided into two separate groups. The first group contained nine anomalies, while the other had eight. Unfortunately, the 2005 report explains that none of is data this reliable due to electronic interference during the survey (Runyan, 2015: 115). Of the four sonar targets, two appeared to be manmade. The two manmade targets tend to correlate with known shipwrecks on the NOAA chart, but without ground-truthing or reliable magnetometer data for comparison, the data is primarily unusable.

Results from Survey Areas E, F and G

The results from these three survey areas included 160 magnetometer anomalies: 90 in area E, 65 in area F, and five in area G. The original surveyors determined that none of the magnetometer anomalies in area E had characteristics typically associated with shipwrecks. Furthermore, the survey did not detected any sonar targets relating to shipwreck materials.

In area F, the survey identified four points of interest, based on the magnetometer readings. The first located in the northwest section of the survey area contains several large anomalies. Unfortunately, the side-scan sonar did not locate any sonar targets in this area and ground-truthing of the objects did not occur. The surveyors did note that based on the relative location to shore, several of these may in fact be lost vehicles.

Based on the magnetic signature of the second and third areas of interest, both can be possible shipwreck locations. The size and magnetic values recorded for these targets have the same characteristics seen with known wreck sites. However, no sonar targets were identified that would relate with either areas. This would just suggest that future research would locate both targets below the sea floor.

The final area of interest was a large magnetic recording in the southeast quadrant of the survey grid. Except for size, the anomaly does not have the characteristics typically associated with wreck sites, and again the side scan survey recorded no data associated with the zone.

Again, the results from the various survey have little historical or analytical value. Nevertheless, when used in reference with the historical and cartographic sources, it can be used as part of the analysis.

Statistical Analysis of Database

While the database from the Ocracoke Shipwreck Database (OSD) contains numerous types of data, including names of several vessels, the year the vessels were lost, reasons for the wrecking, etc., the original research never conducted any type of analysis of the data. Therefore, the author of this thesis condensed and compiled several of these categories into various charts and graphs for statistical analysis. The study will also apply the same statistical analysis to the wreck files kept by the Underwater Archaeology Branch (UAB), to create an overlapping dataset. All graphics are located at the end of this section (page 61). The UAB files contain information on 193 vessels dating from 1728 – 1799. The OSD contains 588 files, ranging from 1728 – 1748. Presumably, the wrecks listed in the UAB dataset are contained within the OSD files. However, for redundancy, this thesis will examine both datasets.

The first category examined is the year the vessels were lost. Using the data from the two sources (OSD & UAB), the author created graphs depicting the number of wrecks per year and per decade. Based off the UAB information, the highest number of losses came in 1785 and 1788 (figure 4). Both years recorded 28 wrecks associated with Ocracoke. For the same years, the OSD recorded the same 28 wrecks in 1785, but only 22 in 1788. Prior to 1800 on the OSD, 1785 holds the most wrecks per year (figure 5). When looking at the entire timeline, the largest groupings occur in 1829, 1785, and 1846, with 29, 28, and 27 respectively.

When reviewed by decade, a steady increase in the number of wrecks is evident. This suggests a steady increase in traffic through and around Ocracoke. Both databases show a respective increase in wrecks during the 1770s and 1780s, followed by a dramatic drop in the

1790s (figures 6 and 7). The OSD depicts a steady rise in wrecks after the 1800s, with a spike during the 1820s.

The next category examined is the type of vessels lost. The two databases show very different information (figures 8 and 9). The UAB's largest group of know vessels is the Sloop, at 24%. It is worth noting that the largest grouping in the UAB data is Unknown type. The largest group in the OSD is the Schooner, making up 50% of the lost vessels. The difference in the two datasets directly reflects the specific timeframes. The UAB database has three recorded wrecks of lighter vessels for Ocracoke and these ships most likely belonged to Ocracoke pilots. All three vessels were lost on the same day in 1788, and there is no additional information for the wrecking. However, it was most likely the result of a storm system, as there are numerous losses recorded for the same day.

The final category discussed in this section is the location of the wrecks. The majority of wrecks associated with Ocracoke do not have an exact location and fall within category 3 (refer back to table 5). Since this is the case, the comparison is between the general locations of OKI (Ocracoke Inlet) vs OKB (Ocracoke Beach). In both databases, the distribution of wrecks is fairly even. The UAB data has 52% of the wrecks associated with OKI and 48% with OKB (figure 10). The OSD has 46% associated with OKI and 44% with OKB (figure 11). The database recorded the location of the remaining 10% simply as 'Ocracoke,' suggesting the location of the wrecks can only be vaguely associated with the Ocracoke region, and not necessarily the island. While this data does not offer any insight by itself, it will be useful during the final analysis.
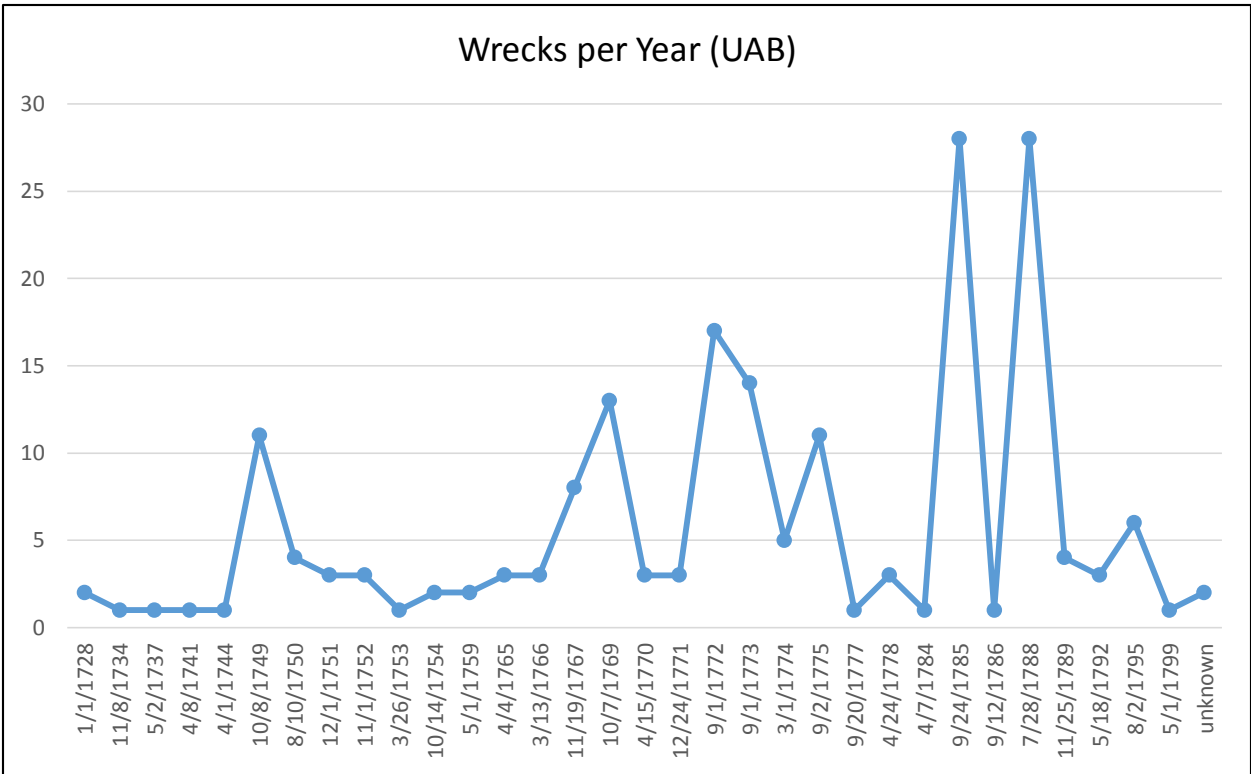
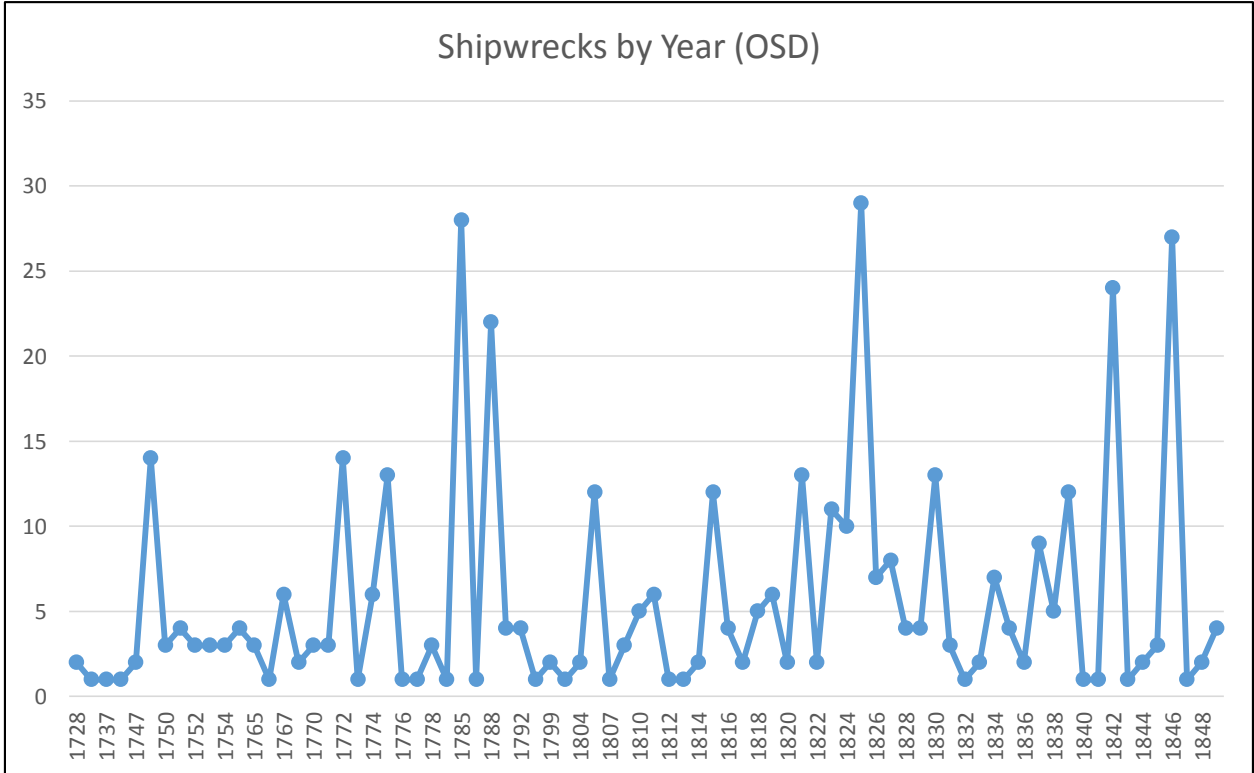FIGURE 4. Number of wrecks per year based on UAB files

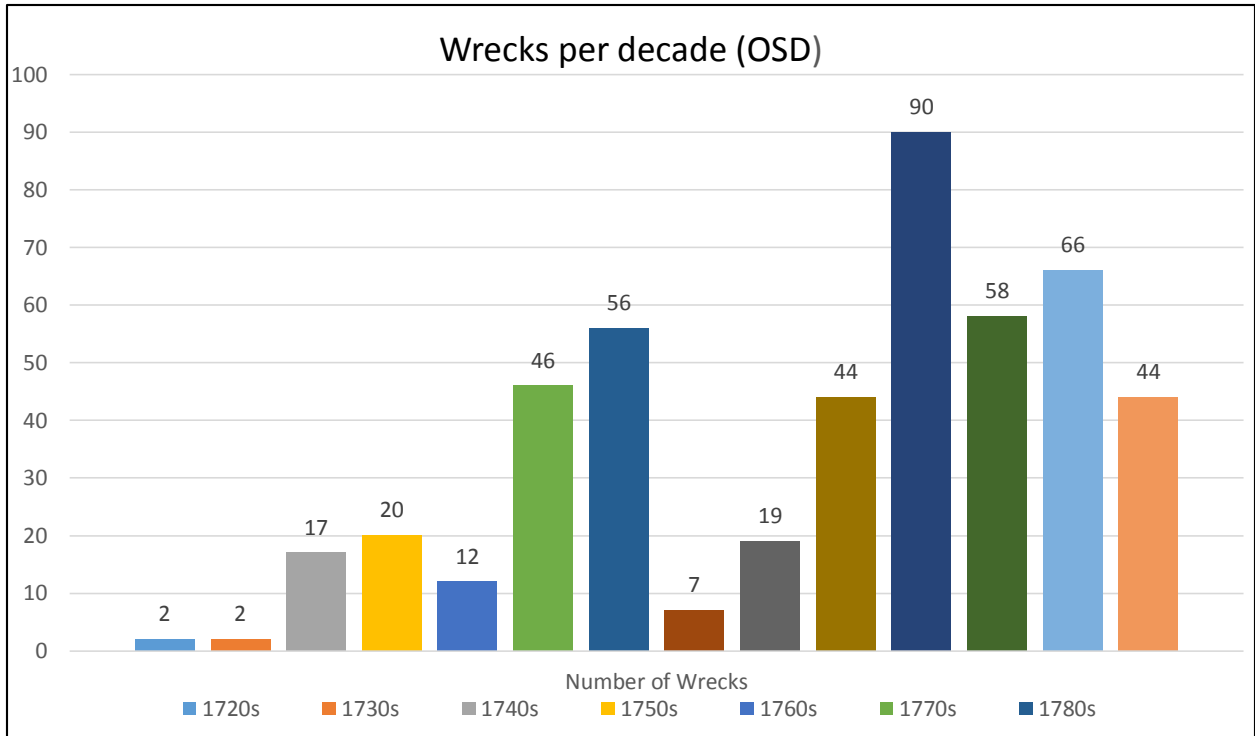FIGURE 5. Number of wrecks per year based on OSD files.

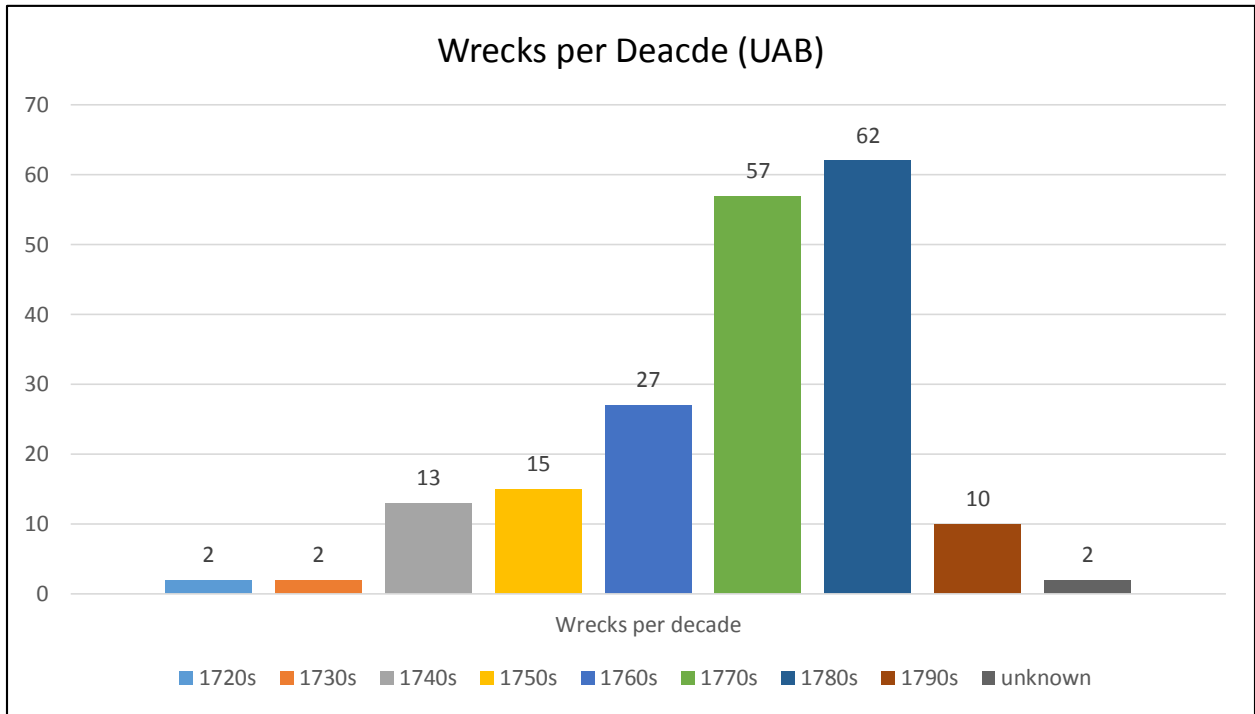FIGURE 6. Number of wrecks per decade based on OSD files.

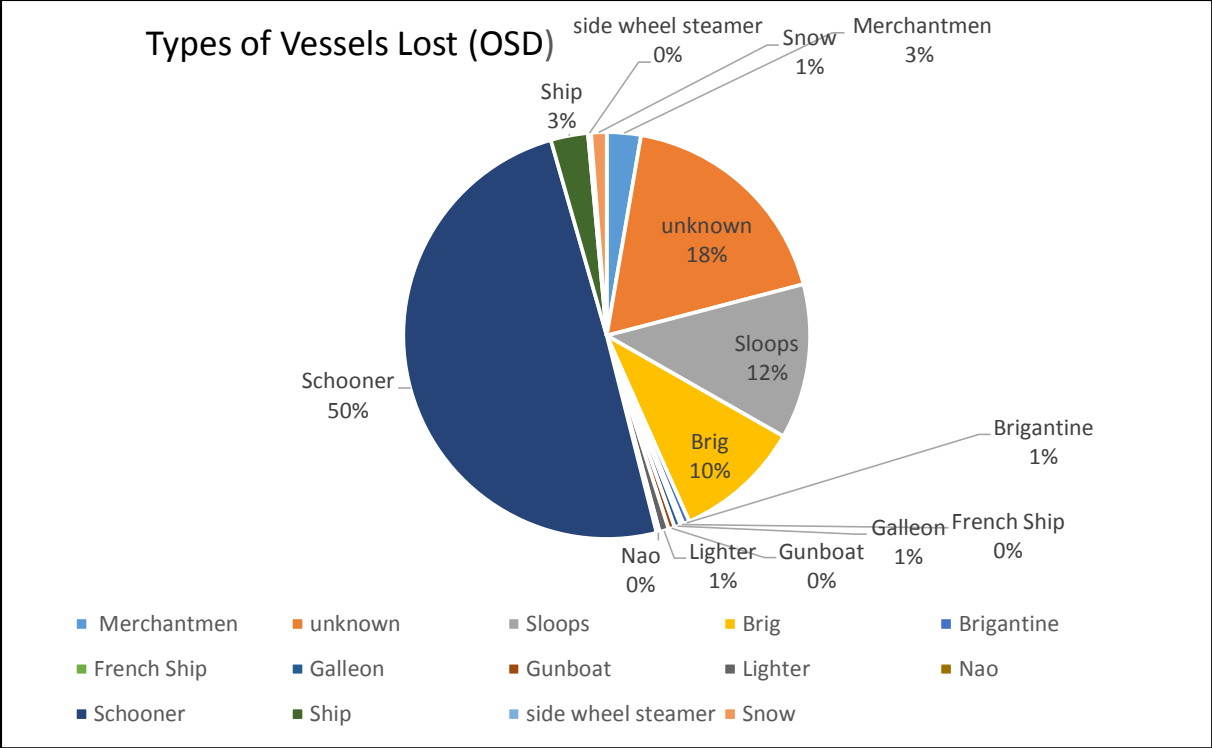FIGURE 7. Number of wreck per decade based on UAB files.

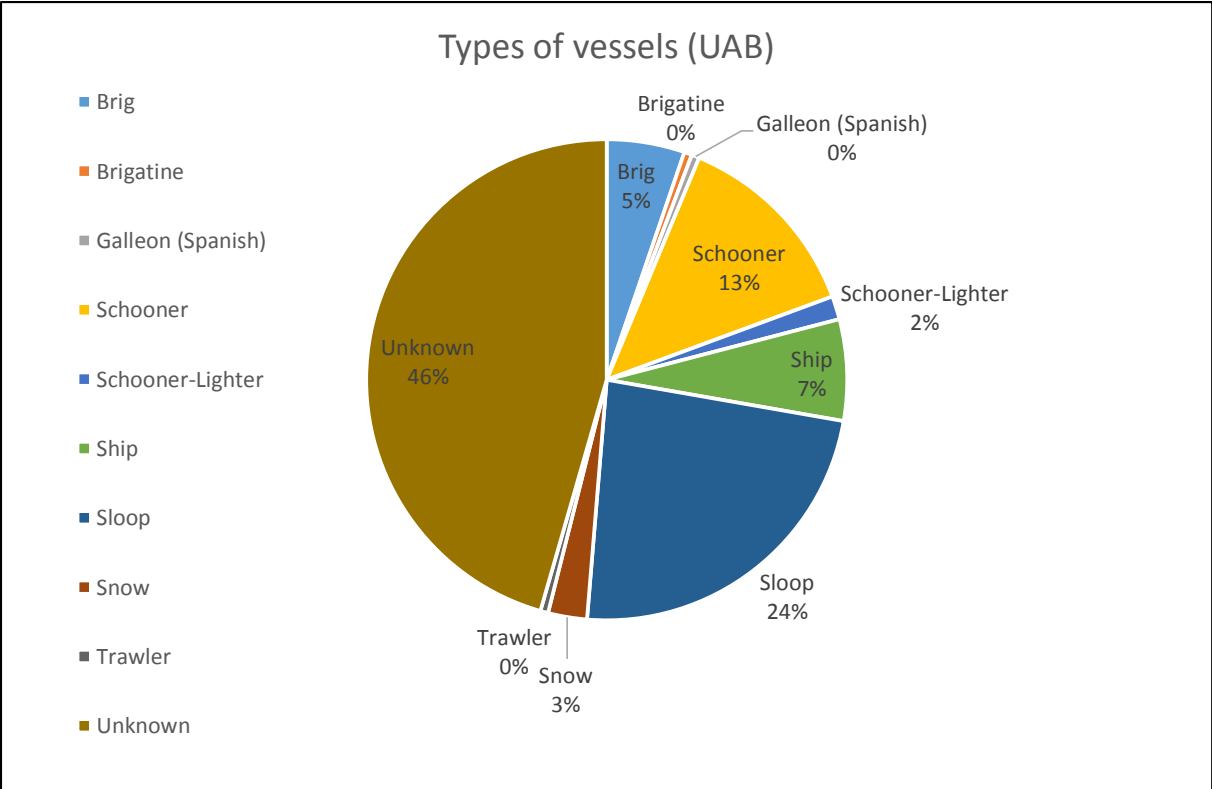FIGURE 8. Typology of vessels lost in OSD files.

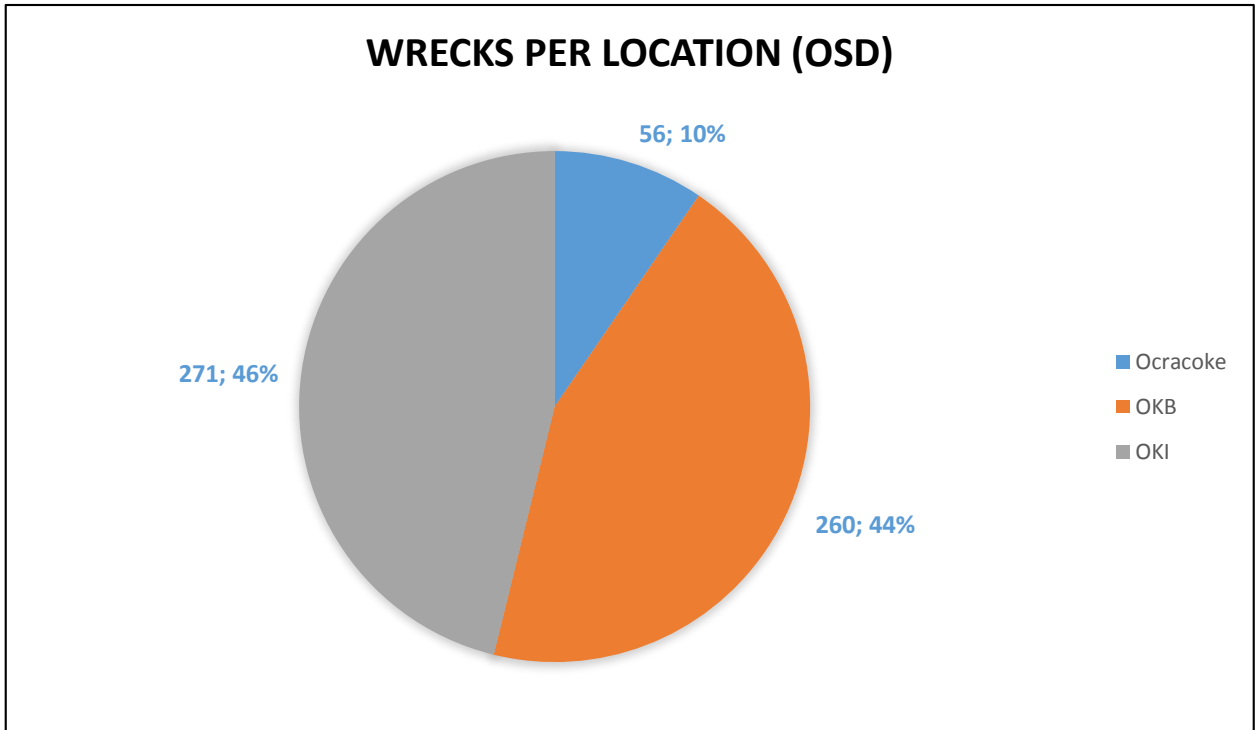FIGURE 9. Typology of vessels lost in UAB files

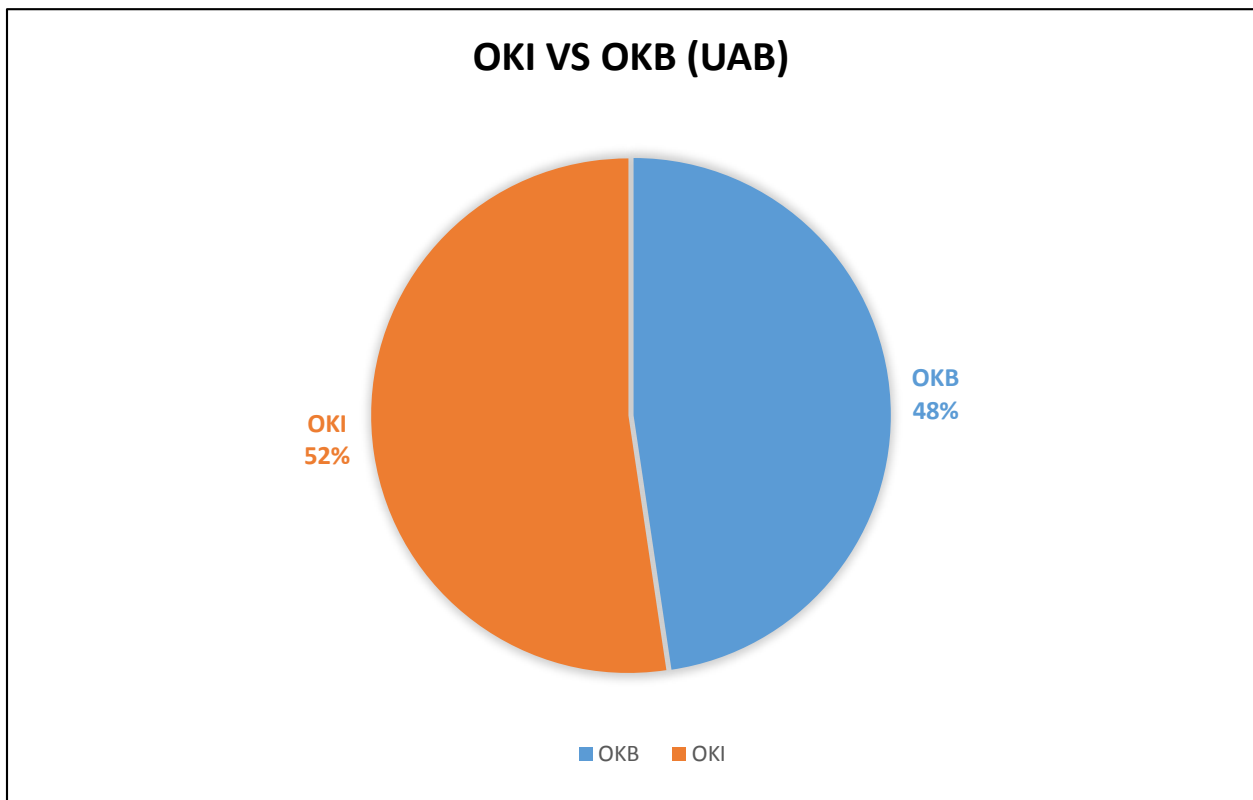FIGURE 10. Location of wrecks in OSD files

FIGURE 11. Location of wrecks in UAB files

Cartographic Analysis

Since the locating of the New World by Europeans, sailors have traversed the water around the Outer Banks of North Carolina and its numerous inlets. Throughout the course of history, the majority of these inlets have either migrated or closed completely. The only inlet that remained open since the establishment of European colonies is Ocracoke Inlet. Currently, the only other viable inlet is Oregon Inlet, which did not open until 1846. However, numerous inlets open and closed during the colonial era, many of which were open long enough to be charted and named on contemporary maps.

The purpose of this section is to examine how the changing landscape of Ocracoke influenced the cultural aspects of the surrounding. People used the contemporary maps for more than just navigation. They also used them as informational guides for the area: depicting shallows, locations of towns and Native American villages, fishing spots, etc. Viewing how this information changes from map to map will aid in determining how people perceived different areas.

In order to accomplish this, 20 contemporary maps pertaining to this timeframe (1715-1846) were analyzed individually and comparatively. The maps were chosen based on the decade created and amount of detail, among other reasons, including image clarity, availability and focal point of the map. A detailed map from the 1740s was not available for study. The individual analyses will determine the importance placed on the Ocracoke region during that time. The comparative analysis will illustrate a multitude of different aspects, including but not limited to how the changing landscape affected the settlements and trade patterns on the island, development of navigational beacons, and the migration of the historic channel. The individual

analysis of maps that offered the most insight will be discussed below. Table 6 lists the maps

used in this analysis; all images of these maps are located in Appendix B.

TABLE 6.

LIST OF HISTORIC MAPS USED IN THESIS.

Date	Title	Publisher
1590	Americae pars, Nunc Virginia	Theodore De Bry
1672	A new discription of Carolina by the order of the Lords Proprietors	John Ogilby
1714	Virginia, Marylandia et Carolina: in America septentrionali Brittannorum industria excultae	John Baptist Homann
1729	Partie meridionale de la Virginie et la partie orientale de la Floride dans l'Amerique Septentrionale suivant les memoires les plus exacts de ceux qui les ont decouvertes de nouveau mises en lumiere	P. Van Der Aa
1755	Partie de l'Amerique Septentrionale	Robert de Vaugondy
1764	La Caroline dans l'Amerique septentrionale: suivant les cartes angloises	Jacques Nicolas Bellin
1770	A Compleat map of North-Carolina from an actual survey	John Collet
1778	Il paese de' Cherachese, con la porte occidentale della Carolina Settentrionale, e della Virginia	Antonio Zatta
1794	North-Carolina	F & R Bailey
1799	A new and general map of the Southern dominions belonging to the United States of America viz North Carolina, South Carolina, and Georgia with the bordering indian countries, and the Spanish possessions of Louisiana and Florida.	Laurie & Whittle
1809	A chart of the coast of North Carolina between Cape Hatteras & Cape Fear	Edmond M. Blunt
1814	North Carolina From the Latest Surveys, by Samuel Lewis	Mathew Carey
1826	Geographisch-statistische und historische Charte von Nordcarolina	Lucas Fielding
1836	North Carolina	Morse & Tuttle
1846	Coast of the United States of North America from Cape Hatteras to Cape Fear North Carolina	E & GW Blunt
1856	Preliminary chart of the sea coast of North Carolina	United States Coast Survey

1857	Sketch D showing the progress of the survey in section no. IV, from 1845 to 1857	United States Coast Survey
1857	Preliminary chart No. 11 of the sea coat of the United States from Cape Hatteras to Ocracoke Inlet, and from Cape Lookout to Bogue Inlet, N.C.	United States Coast Survey
1858	The coast of the United States, sheet no. 2: from Cape Lookout to Cape Carnaveral, from the U.S. coast surveys	E & GW Blunt
1862	Coast of North Carolina & Virginia	United States Coast Survey

The first map in this analysis is the *Virginia Marylandia et Carolina* map, by Johann Baptist. Based on the information within, the map dates to circa 1714, but the exact creation date of the map is unknown. The map depicts several of the colonies, focusing on Virginia, Maryland, and Carolina. A drawing of a hut represents the location of Native American villages, several of which are located throughout the map. Denoted by small circles, many of the European towns include a name written to the side of the marking. In the corner of the map is a large relief of European merchants trading with the local natives. This would let other travelers know that the natives in this region were not hostile, and amenable for trade.

Focusing in on the region of Ocracoke, the map depicts the location of the sand bar and lists depth soundings around the inlet. On this map, the name "Wokokon" appears when referring to Ocracoke. The imagery of the island itself is not very detailed; however, the location of shoals are given. These illustrations suggest that Hatteras Inlet was surrounded by shoals, and unusable. The location of a town is also marked on the island of Ocracoke. This suggests that an established settlement was on the island by the creation of this map. If this is the case, either the date of the map is incorrect, pilots (in some form) were working on the island before the congress passed the law for pilots, or there was some form of settlement on the island prior to the

establishment of the pilots. In any case, Ocracoke is one of only two islands on the Outer Banks marked with a town; the other is Currituck, near the Virginia border. This signals that Ocracoke was the best place for travelers to navigate through an inlet.

FIGURE 12. Section of 1714 Homann map featuring the Outer Banks of North Carolina (University of North Carolina 2016).

The next map discussed is the 1770 map tilted (A) *Compleat Map of North-Carolina*, created by John Collet. This map shows the borders of North Carolina stretching from the coast westward with no boundary. Within the map are detailed locations of towns, roads, rivers, swamps, forts, and inlets. Collet's map is one of the major maps for North Carolina's history. At the time, its accuracy surpassed all other maps of the region (Cummings 1966:18).

FIGURE 13. Close up of Pamlico Sound Region of 1770 Collet Map (University of North Carolina 2016).

The majority of detail in the map focuses on the westward expansion of the state, depicting the towns, rivers, and roadways. Fortunately, there is no real lack of detail when examining the Outer Banks. The shoals all through the Pamlico Sound are distinctly annotated, depth soundings appear around and through Ocracoke Inlet (spelled Occacock on the map), and the channel is clearly defined. The map also shows all other inlets along the Outer Banks shoaled over, and depicts Ocracoke Inlet as the only viable passageway. There are no illustrations for towns or landowners on Ocracoke, but there is a settlement on Portsmouth; depicted with several buildings, and even a church, on the south side of Ocracoke Inlet. The

information in this map, by itself, suggests that Portsmouth was of greater importance than

Ocracoke in the area at this time.

The 1794 map know as *A New Chart of the Coast of North America from Currituck Inlet to Savannah River,* was created specifically for the purpose of navigation. The chart details the location of wrecks, shoals, and other ship traps throughout the area (Wooldridge 2012:221). Various anchorages are marked on the map with the symbol of an anchor. In the lower right hand corner is a small chart detailing "Astronomical Observations." There is also a note "To Masters of Vessels" that discusses the fishing in the area.
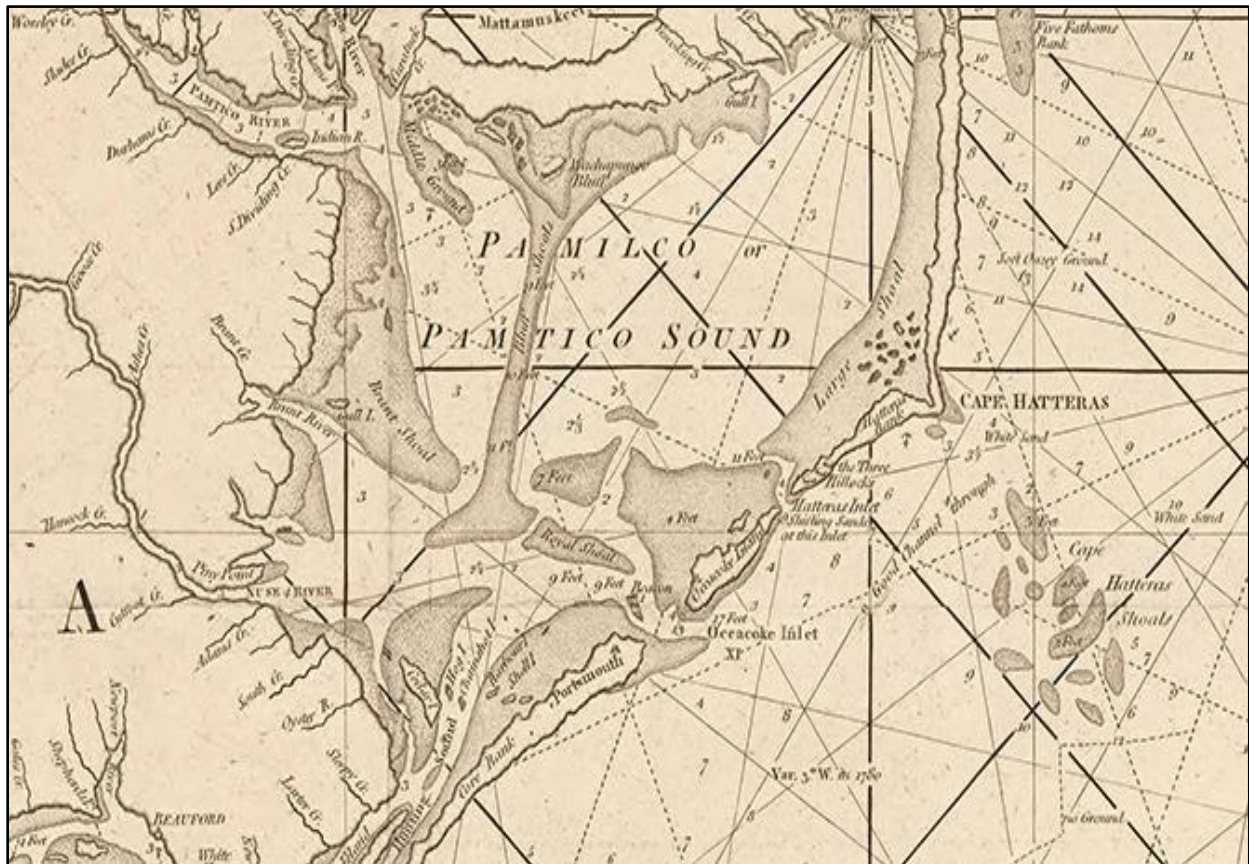

FIGURE 14. Section of Ocracoke and the Surrounding Area from 1794 Laurie & Whittle map (University of North Carolina 2016).

In the analysis of Ocracoke, the shoals at Ocracoke Inlet show that all vessels could only enter the channel from the north. The depth for the inlet is noted and icons for towns appear on

Ocracoke as well as Portsmouth. As with the 1770 Collet map, the name of Beacon Island

appears on this chart, however there is more attention to detail and includes the shallows around

the island.

One of the most valuable charts for this study is the 1809 *Chart of the Coast of North*

Carolina Between Cape Hatteras and Cape Fear published by Edmond M. Blunt. This map

includes a detailed sketch of the coastline, sounding depths, and the shoals within and around the
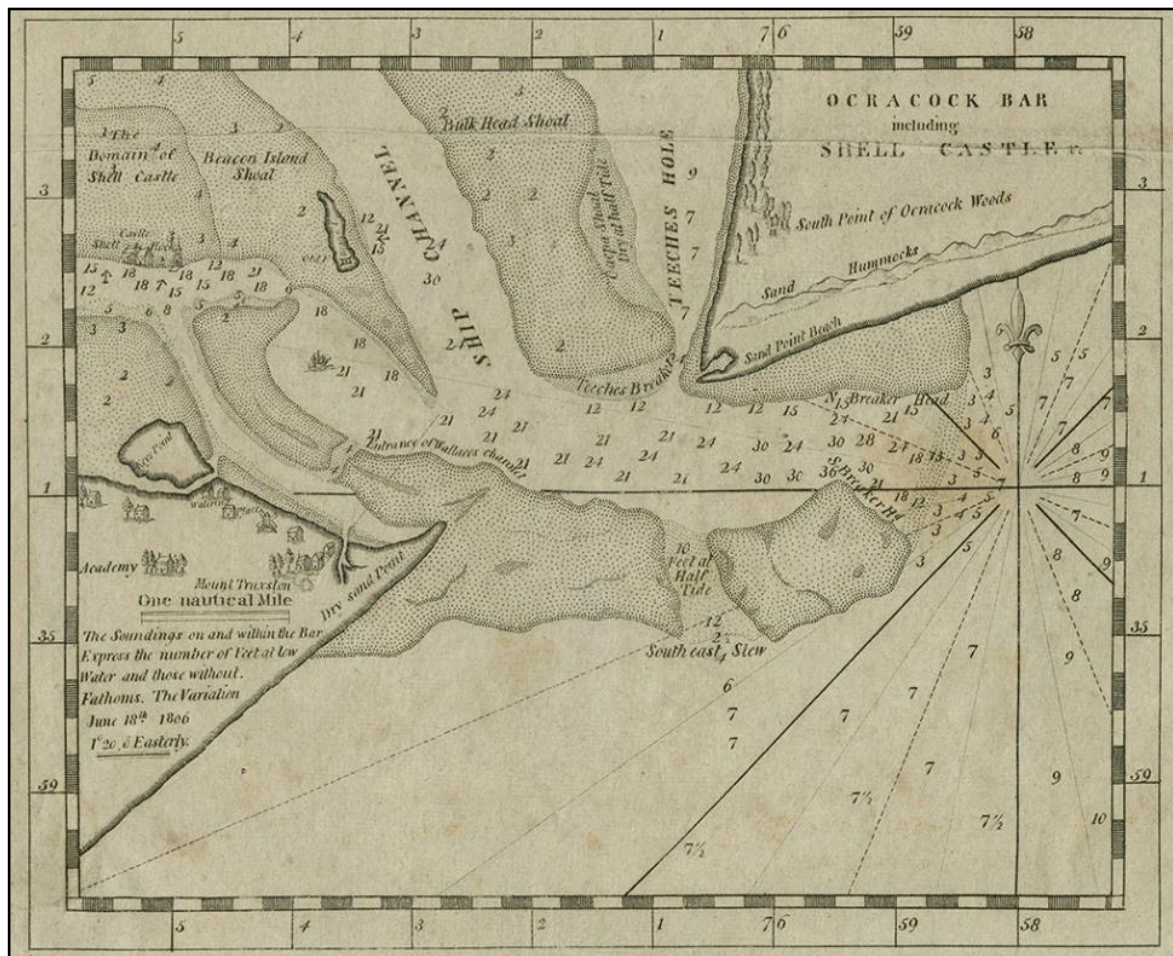

FIGURE 15. Detailed section of Ocracoke Inlet from 1809 Blunt Map (University of North Carolina 2016).

sound. It is worth noting that at the top of the chart is the inscription "Engraved for the

American Coast Pilot." Also found on the chart are small descriptions of the sea floor, such as "Fine sand with small dead Shells."

The chart also includes a second map titled *Ocracoke Bar including Shell Castle*. The map focuses solely on Ocracoke Inlet and gives many details for the area. It includes the various buildings located on Portsmouth, including a windmill, a watering place, and an academy. This chart depicts Shell Castle for the first time and includes anchorages, depth soundings for 'Teeches Hole,' 'Ship Channel,' and the slew though the Ocracoke Bar. Again, there is nothing denoting any type of settlement on Ocracoke Island. This may be because only the tip of the island appears in the detailed map.

The 1814 map titled *North Carolina from the Latest Surveys* created by Samuel Lewis appears to be a based off a mother map, and the creator just added new details. A mother map is a base map copied repeatedly (CITATION). The main purpose of this map was to depict the county boundaries of North Carolina. Even though there is not much detail for the Outer Banks, this map is important because it is the first time that the name and location of Pilot Town appears on a map. The map illustrates Ocracoke Inlet as the largest inlet along the Outer Banks, suggesting that it is the only viable passageway.

The next major development in the maps is on the 1846 map *Coast of the United States of North America from Cape Hatteras to Cape Fear North Carolina*, created by the E and GW Blunt firm. The chart details the coastline, with soundings, descriptions of the sea floor, and the location of inlets, lighthouses, and light boats.

In the lower left side of the map are six inserts of the various shoals travelers would

encounter along the coast. The Ocracoke bar is among one of these inserts. The chart shows the

soundings of the channel and shows that the channel has narrowed greatly. On Ocracoke Island,

the locations of a lighthouse and a windmill are marked. Next to the windmill is the location of

the "channel for Boats." Another main point of interest on this map is that the bar has

completely shoaled over the entrance for Ocracoke Inlet. This is important as Oregon Inlet

became usable around this same time. This can also be seen on the 1856 *Preliminary Chart of*

the Sea Coast of North Carolina and the 1857 *Preliminary Chart No. 11 of the coast of the*

United States. Cartographers created both charts for the United States Coast Survey. The next
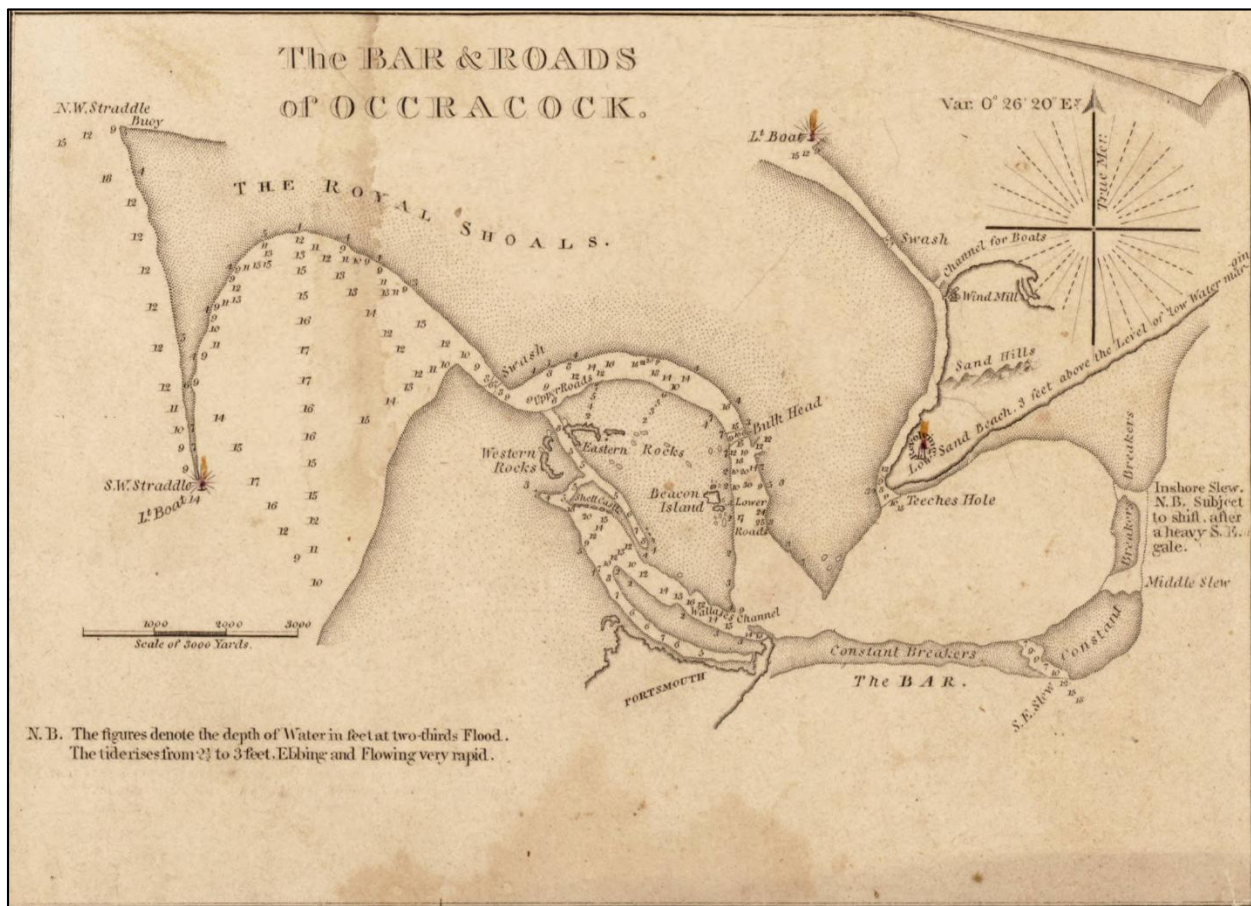

FIGURE 16. Section of 1846 map by E & EW Blunt, Detailing the Ocracoke Area (University of North Carolina 2016).

time a chart depicts Ocracoke Inlet as easily accessible is not until 1862 on the United States Coast Survey, *Coast of North Carolina and Virginia*. However, this chart also depicts a named Oregon Inlet, with a channel clearly marked.

The analysis of the source materials have lent insight into the roles of the pilots and the effects they had on the cultural landscape. The historical records show how the government dealt with the various issues concerning pilots. The archaeological data reflects the effectiveness of the pilots, or the lack thereof, and the cartographic sources have shown the perceived importance of Ocracoke and the inlet. However, one cannot make a comprehensive conclusion without a comparative analysis of the data. A comparison of this data aids in the verification of the conclusions drawn for the research questions in this thesis.

Chapter 5: Final Analysis and Conclusion

So far, this thesis has discussed the various sources pertaining to Ocracoke pilots and the maritime landscape separately. This chapter combines all of the information from the previous chapters to determine how much of an impact the pilots had on the cultural landscape. To accomplish this, the statistical data was used to determine any areas of interest. These areas were then compared with the relevant data from the other sources. The analysis of the combined resources confirm the correlations between the datasets and provide insight into the cultural landscape of Ocracoke.

Comparative Analysis

According to the historical records, pilots were working on Ocracoke as early as 1715. However, based on the statistical data developed in this thesis, ship traffic for Ocracoke does not begin to increase until the 1740s. Both the OSD and the UAB file only show four recorded wrecks prior to 1740: two in the 1720s and two in the 1730s. Both vessels from the 1720s were lost in 1728: one during a hurricane and the other was a recorded as abandonment on Ocracoke Bar. However, when queried in ArcGIS, no location appears for the abandoned vessel associated with the OSD database.

Even though the OSD recorded 17 wrecks compared to the 13 in the UAB files, the data from the two offers the same information for the 1740s. Of the lost wrecks recorded, 11 went down during the same hurricane in October of 1749. For these 11 ships, the records give the locations as inside the bar; the other five wrecked 5 miles north of the inlet. Documented as running aground on the bar, the locations of the remaining two vessels are not recorded in the GIS database. When consulting the contemporary maps for the 1740s, there is no evidence of the

location of the bar. This lack of detail for the inlet suggests that Ocracoke Inlet is not yet of any major importance. The first map detailing the shoals of the Outer Banks is the 1755 map created by Vaugondy.

For the 1750s, the UAB has 15 recorded wrecks, while the OSD has 20. This is the first time records indicate that storms and/or hurricanes did not cause the majority of wrecks. The datasets note the locations for ten of the wrecks either as the Ocracoke bar or in the inlet itself. This suggests that the cause of the wrecks was due to navigational error. Even though the maps now depict the shoals, there are still no details for the channel, and the use of pilots would be the safest option. Based on the laws passed by the General Assembly, the historical record suggests that pilots were not reliable at this time. The unpredictability of the pilots would have negative repercussions for ships trying to use the channel. The shipwreck data analyzed in this thesis supports such a hypothesis.

The notion that pilots' neglect was a factor in the wrecks that occurred in the 1750s, gains further creditability when compared to the data for the 1760s. While both databases have a larger loss count, the majority of the wrecks were due to storms and hurricanes. The increase in total number of ships lost suggests an increase of traffic through the inlet.   Of all the wrecks lost, only three were not storm related which aligns with the historical record as well. The reform to the navigational laws in the 1750s and 1760s, along with the law of 1766 allowing pilots to own land on Ocracoke, provided enough incentive for the pilots to conduct their services properly.

The information for the 1770s varies slightly between the two datasets. The UAB records list 57 lost vessels, while the OSD has 46. The majority of the wrecks that happened during this decade occurred prior to the Revolutionary War. When vessels lost on the same day

due to storms or hurricanes are removed from the equation, the number of wrecks in the files

drop to 15. One of the vessels lost during the Revolutionary War (1777) was a sloop, most likely

a blockade-runner. The database classifies the vessel as a cargo carrier and records the cause of

the wreck as ran aground by the enemy.

The historical record indicates that this was a dangerous time for Ocracoke. At this point,

pilots united to stop working the inlet, and unauthorized people were piloting vessels, potentially

causing wrecks. Moreover, there is evidence of this being the case. Both databases show at least

three ships ran aground on Ocracoke Bar and were a total loss in the first three months of 1778.

One of these vessels, *Diamond*, the UAB database records the captain's reports of various people

living near Ocracoke stealing his personal belongings and a large quantity of the ship's goods.

In 1770, John Collet created a detailed map of North Carolina. The map depicts what can

be considered an accurate representation Ocracoke Inlet, including the channel, bar, and depths.

This map shows the known hazards of the inlet, further suggesting that the wrecks previously

discussed occurred due to inexperience of the person navigation the waters. This helps verify the

notion that licensed pilots were not working the inlet during the latter half of the 1770s.

Again, for the 1780s, there is little variation between the two datasets. The UAB records

a total of 62 wrecks, compared to the 56 in from the OSD. The records from both databases

detail the loss of 28 vessels in 1785 due to a gale in September. The other large group of vessels

lost that year occurred during the hurricane of 1788. The OSD has a recorded 22 lost vessels,

and the UAB has 32. The total number of vessels lost still shows a rise in the traffic around

Ocracoke.

The Colonial Records state that during the Revolutionary War, Ocracoke Inlet was the only unguarded inlet in North Carolina, and was a vital part of the state's trade system. However, this statement is difficult to verify using the other sources. For the early part of the 1780s, no map offers much detail for Ocracoke, the channel, or the bar. Neither database has any record of shipwrecks that date to the latter part of the Revolutionary War. By no means does this lack of information discount the historical record. The absence of wrecks may directly relate to the development of the 1781 act protecting navigation for Ocracoke. The assembly passed the act, after the war ended, due to the poor condition of commerce directly relating back to the pilots. This suggests that this act had no direct effect on the navigation at Ocracoke. This law indicates that once again there was little accountability for pilots or the upkeep of navigational markers for the area. The changes made to the piloting fees for Ocracoke, exempting vessels under 20 tons, suggests the inlet was used mostly by smaller local merchant vessels, which supports the notion that pilots were neglecting their duties, forcing larger vessels to seek safer routes. Changes to the physical landscape, such as a shift in the bar or the depth of the inlet may also be the cause behind the piloting fees, however the cartographic evidence suggest that this is not the case. The 1778 map created by Antonio Zatta and the 1794 map by F and R Bailey, both depict the shoals of Ocracoke Inlet and aa clear channel though them.

The historical record for the Ocracoke pilots stops abruptly towards the end of the 1780's, leaving the other sources to fill in the gap. There is a decrease in the number of wrecks recorded for the 1790s in both databases. The UAB has only ten listed and the OSD, only seven. Based on the UAB files, six vessels were lost during a storm in August of 1795. This information suggests a tremendous decrease in number of vessels using Ocracoke Inlet, given that only seven years prior, 31 vessels were lost in a similar storm, during the same time of the

year. Unfortunately, none of the vessel locations appears in the GIS data, allowing no further analysis of this decade. However, when compared to what is last reported in the historical record, the decrease in number of wrecks in the databases supports the theory that this was a time of decreased commerce for Ocracoke.

The statistical data for the first decade of the 1800s shows an increase in the number of vessels lost, suggesting that commerce is returning to Ocracoke. The contemporary maps for the time show Ocracoke as the only viable inlet north of Cape Lookout, and the general history of the Outer Banks supports this claim. The 1809 map created by Edmond Blunt has a section detailing every part of Ocracoke inlet, including the location of the *slew* (a small area through which the outgoing water of the inlet moves) through the bar, and the various depths of the channel. This attention to detail proves the increasing importance of the inlet.

The total number of vessels lost during this decade was 19. Based on the data from OSD, the large majority of wrecks over the years occurred due to severe storms; only three ships reported sinking due to hitting the bar. The low number of total wrecks suggests there is still not a lot of commerce coming through the area; however, it does suggest that vessels can make the trip safely, and that the pilots are in place and working.

By the 1810s, the number of recorded wrecks in the OSD has increased to 43. The wrecking pattern of the database reflects a steady increase in the number of vessels using Ocracoke, with a small spike in the number of wrecks in 1815, mainly due to two severe storm systems. Throughout this decade, storms are the main cause of wrecks for any given year. The historical maps for the time tend to have a more accurate depiction of the Outer Banks than earlier maps.

While most are complete maps of North Carolina, Ocracoke Inlet, clearly labeled on each. Furthermore, the name of the settlement on Ocracoke, Pilot Town, begins to show up on the maps; the first one was the 1814 map by Samuel Lewis. This suggests that Pilot Town is now a place of importance. Since the island has never had a large population, the importance of the town relates to its function as part of crossing the inlet. The importance of Ocracoke once again is that it is the only viable inlet for the Outer Banks. Moreover, that fact would force safe navigation to be a priority. Based off the historical trends, the safety most likely came by laws and regulations that incentivized the pilots, such as higher piloting fees or large penalties against pilots not taking ships across the bar.

For the decade of the 1820s, there is a large spike of shipwrecks (90) recorded in the OSD. When examined, the average wreck number of each individual year is around seven or eight a year. A third of the total wrecks occurred in 1825, due to several storms that year. The data shows the 1820s as the peak in commerce for the Ocracoke region. When examining the maps for this timeframe, a distinct loss of detail is noticeable for the Outer Banks. Most of the detail now focuses on the network of roadways throughout the state.

The next two decades prove to be the death knell for Ocracoke's role as a major part of commerce. The OSD has a record of 58 wrecks in the 1830s and 66 in the 1840s. The average number of wrecks per decade drops dramatically to around 20 after the 1840s. This raises the question: why abandon an established inlet? One could suggest that the opening of Oregon Inlet in 1846 is the answer. Even though Oregon Inlet was a safer inlet and the use of pilots not needed, the contemporary maps suggest a different reason. Suggesting that Ocracoke inlet was not a viable inlet during this time.

The various maps for this timeframe all have depict the bar at Ocracoke Inlet completely wrapping around the mouth of the inlet, offering only a small slew for vessels to pass through. The map that best depicts the issues associated with the inlet is the 1846 E. & G.W. Blunt map. This map displays a detailed survey conducted on Ocracoke Inlet. It shows the bar completely blocking access to the channel, except for three small slews, one of which is marked being seven feet deep. This lack of access forced larger vessels to use other inlets such as Oregon Inlet and by the time Ocracoke Inlet was viable again in later decades, well-established trade routes and commerce went through Oregon Inlet.

Conclusion

With all the data gathered from this thesis, several inferences regarding the roles of Ocracoke pilots are available, many directly answering the research questions of this thesis. First of which explains the direct effect pilots had on the safety of navigation for Ocracoke Inlet. The evidence suggests that the pilots had both a positive and negative impact on navigation, dependent upon the government's perceived necessity of the inlet and its pilots. There are several points through the historical record that indicate this perspective.

The first is that one cannot assign an exact timeframe to the establishment of pilots on Ocracoke. The history begins in 1715, however the evidence from the databases, along with the cartographic sources, suggest Ocracoke was not a major port at this time. The letters from Governor Burrington pleaded for a settlement of pilots to be established. While there are people on Ocracoke at this time, it is unclear if they were pilots. Whatever the case, the main concern for vessels using the inlet for the first part of the 18th Century is a lack of authority at the Inlet.

It is not until the 1740s that it becomes clear that pilots are living on Ocracoke. The issues around Ocracoke pilots become so great that it forces the General Assembly to deal with their "insufficiency and neglect." The appointment of commissioners and the establishment of penalties for pilots are positive steps for the regulation of pilots. The lack of established regulations prior to this point suggests that Ocracoke suddenly became a major concern for commerce in North Carolina. The increase in the number of shipwrecks during this time may be a direct reason for these regulations.

For the secondary set of research questions, the information in this thesis clearly reflects not only the navigation policies and procedures of the Ocracoke pilots but also the challenges regulation the pilots were, through the various laws enacted by the General/State Assemblies. The historical records show the numerous times the General/State Assemblies took to counteract the actions of pilots. However, it is worth considering that the actions of the pilots as directly related to their conditions. Throughout the historical record, there is evidence of Ocracoke's importance to commerce. Nonetheless, no steps were ever taken to solidify its stature as a major port of call. They never built customs and collection houses on the island. The construction of the fort never began due to the Assembly re-appropriating the allotted money. The construction of these establishments would have brought stability to the area quickly and along with it, the economic boom that never occurred.

In the latter 18th century, Ocracoke became the only viable inlet for commerce and steps are taken to incentivize good pilots. The Assembly gives the pilots land that they can own, and increase their piloting fees. This pattern of focusing attention to Ocracoke Inlet repeats over and over in the historical record, and the various sources from the previous sections of this thesis verify these accounts. When the inlet was of economic importance, authorities put into place

various steps to create a productive environment for navigation through the channel. When it was not, they seemingly left the pilots to their own devices.

While it was not possible to conduct any fieldwork on the island to determine if any footprints of maritime infrastructure still exist. The data gather can be used to create a predictive model, for where the areas may exist. The information on the historical maps show the locations of the sand bars, the changes in the channel, structures on the islands of Ocracoke and Portsmouth, as well as the name and location of Pilot Town. When one compares all this information with the historical and archaeological data, relative locations for the town and anchorages develop.

Early in this thesis, predetermined archaeological zones where describes. These were the broadest areas where any archaeological evidence could exist. Now with the fully develop understanding of how the people interacted and interpreted the landscape, it is possible to fine tune this zones and develop Westerdahl's concept of transit points, inside the various zones. The contemporary maps show the location of the channel and the bar. The shipwreck data from the UAB and the 2005 remote sensing surveys provide insight into the shipping lanes and anchorages of the area, while the historical records offers information on the location of settlements compared to pilot and lightering port. With the information, one can add the transit points into the archaeological zones. Figure 17 illustrates these areas. While the Pilot Town zone is still an area of interest, there is not a transit point associate with it. The transit points for this area would be where the pilots and/or lighterers interacted with the merchant ships. For the offshore anchorage zone, the transit point exist just outside the bar. The historical documents show this as the location where merchant vessel had to wait for pilots. The transit point for the Ocracoke channel zone encompasses the various locations of the channel throughout time, which

includes some areas now cover by land. There exist no transit point for the near-shore anchorage zone, as there is no evidence supporting vessels anchoring off Ocracoke Island. The records show the vessel most likely went either to Portsmouth, Beacon Island, or Shell Castle.

FIGURE 17. Adapted satellite image displaying transit points (Google Earth, 2015)

All of the analysis developed here relies on the historical and statistical data available at the time. To verify any of the claims made, archaeologists must conduct more research in the area. One area of interest that would benefit greatly from future research is the development of who the earliest settler were. The historical record states that pilots were the first settlement on

the island. However, the 1714 map analyzed in this thesis, show some form of settlement already established.

Another question raised by this thesis was the issue that the earliest pilot could be the same group of people history is considering pirates; however, it was unanswerable. There is evidence within this thesis to suggest this being the case. The fact that the pilots lived on the island, but were not allowed to raise livestock or even own land until 1766, coupled with the fact that there were no port houses for merchants to trade goods, could have provided enough incentive for the pilots do to what was necessary to survive.

Bibliography

Anschuetz, Kurt, Wilshusen Richard, and Cherie Scheick.
2001   An Archaeology of Landscape: Perspective and Directions. *Journal of
        Archaeological Research* 9(2):157-211.

Bowens, Amanda (Editor)
2009   *Underwater Archaeology: The NAS Guide to Principles and Practice.* Wiley-Blackwell,
        West Sussex, UK

Brickell, John
1737   *The Natural History of North Carolina.* James Carson, Dublin, Ireland. Reprinted 1911
        by authority of Trustees of Public Libraries, Raleigh, NC.

Butler, Lindley S.
2000   *Pirates, Privateers & Rebel Raiders of the Carolina Coast*. University of North Carolina
        Press, Chapel Hill, NC.

Cecelski, David S.
2001   *The Waterman's Song: Slavery and Freedom in Maritime North Carolina*. University of
        North Carolina Press, Chapel Hill, NC.

Chapman, Henry
2006   *Landscape Archaeology and GIS*. Tempus Publishing Limited, Gloucestershire, UK

Combs III, Edwin L.
2003   Trading in Lubberland: Maritime Commerce in Colonial North Carolina. *The North
        Carolina Historical Review* 80(1):1-27.

Crittenden, Charles Christopher
1930   The Seacoast of North Carolina History, 1763 – 1789. *The North Carolina Historical
        Review* 7(1):433-442.
1931   Ships and Shipping in North Carolina, 1763 – 1789. *The North Carolina Historical
        Review* 3(1):1-13

Cumming, William P.
1966   *North Carolina in Maps*. State Department of Archives and History, Raleigh, NC

Dethlefsen, Edwin, Stephen J. Gluckman, R. Duncan Mathewson and Norman F. Barka
1982   Archaeology on St. Eustatius: The Pompeii of the New World. *Archaeology* 35(2):8-15

Dunbar, Gary S.
1958   *Historical Geography of the North Carolina Outer Banks.* Louisiana State University
        Press, Baton Rouge, LA.

Duncan, Brad
2000   *Signposts in the Sea: An Investigation of the Shipwreck Patterning and Maritime Cultural Landscapes/Seascapes of the Gippsland Region, Victoria.* Honor Thesis, School of Anthropology, Archaeology, and Sociology, James Cook University, Queensland, Australia
2006   *The Maritime Archaeology and Maritime Cultural Landscapes of Queenscliffe: A Nineteenth Century Australian Coastal Community.* Doctoral Thesis, School of Anthropology, Archaeology, and Sociology, James Cook University, Queensland, Australia

Ford, Ben (editor)
2011   *The Archaeology of Maritime Landscapes.* Springer Science+Business Media, LLC, New York, NY
Georch, Carl.
1989   *Ocracoke*. John F. Blair, *Publisher*, Winston-Salem, NC.

Gibbs, Martin
2006   Cultural Site Formation Processes in Maritime Archaeology: Disaster Response, Salvage, and Muckelroy 30 Years on. *The International Journal of Nautical Archaeology* 35(1): 4-19.
2016   *Please, God Send Me a Wreck: Responses to Shipwrecks in a 19th Century Australian Community.* Springer Science+Business Media, LLC, New York, NY

Haag, William G.
1958   *The Archaeology of Coastal North Carolina.* Louisiana State, Bâton Rouge, LA.

Hawks, Francis L.
1961   *History of North Carolina with Maps and Illustrations* Vol. 1. Fayetteville, NC: E.J. Hale & Son, Fayetteville, NC.

Hairr, John.
1999   *Images of America: Outer Banks*. Acradia Publishing, Charleston, SC

Herndon, Melvin G.
1972   The 1806 Survey of the North Carolina Coast, Cape Hatteras to Cape Fear. *The North Carolina Historical Review.* 49(3): 242-253.

Howren, Robert.
1962   American Speech. *The Speech of Ocracoke, North Carolina*. 3rd ed. Vol. 37. 163-75. Duke University, Durham, NC

United State Census Reports
1850   Hyde County Census Records. Mircofilm, North Carolina Collection, Joyner Library, Greenville, NC.
1860   Hyde County Census Records. Mircofilm, North Carolina Collection, Joyner Library, Greenville, NC.

1900   Hyde County Census Records. Mircofilm, North Carolina Collection, Joyner Library, Greenville, NC.

Ilves, Kristin
2012   Do Ships Shape the Shore? An Analysis of the Credibility of Ship Archaeological Evidence for Landing Site Morphology in the Baltic Sea. *International Journal of Nautical Archaeology* 41(1):94-105.

Johnson, Danette.
1997   *Carolina Pirates: Conformists or Aberrants?* Master's Thesis, California State University, Dominguez Hills, CA.

Jones, Andrew
2002   *Archaeological Theory and Scientific Practice.* Cambridge University Press, New York, NY

Lawrence, Richard W., and Mark Wilde-Ramsing.
2001   In Search of Blackbeard: Historical and Archaeological Research at Shipwreck Site 0003BUI. *SOUTHEASTERN GEOLOGY* 40(1):1-9.

Lee, Robert E.
1974   Blackbeard the Pirate: a Reappraisal of His Life and times. J.F. Blair Publisher, Winston-Salem, NC.

Martin, Francis X.
1829   *The History of North Carolina, from the Earliest Period*. A.T. Penniman and Co., New Orleans, LA.

McGuinn, Phillip
2000   *Shell Castle, a North Carolina Entrepôt, 1789 – 1820: A Historical and Archaeological Investigation.* Master Thesis, Program in Maritime Studies, East Carolina University, Greenville, NC.

McKinnon, Jennifer, Julie Mushynsky, and Genevieve Cabrera.
2014   A Fluid Sea in the Mariana Islands: Community Archaeology and Mapping the Seascape of Saipan. *Journal of Maritime Archaeology* 9(1):59-79.

Merrins, Harry R.
1964   *Colonial North Carolina in the Eighteenth Century*. University of North Carolina Press, Chapel Hill, NC.

Muckelroy, Keith
1978   *Maritime Archaeology.* Cambridge University Press, Cambridge, Great Britain.

National Oceanic and Atmospheric Administration
2016   Historic Map & Chart Collection. NOAA Office of Coast Survey, Washington, DC
        <http://historicalcharts.noaa.gov/>.

Newell, Samuel W.
1984   *A Maritime History of Ocracoke Inlet, 1584 – 1783.* Master Thesis, Program in
        Maritime Studies, East Carolina University, Greenville, NC.

North Carolina State Archives
1790   Colonial/State Records of North Carolina, 1709 – 1790. North Carolina Division of
        Archives and History, Raleigh, NC.
1765   Governor Arthur Dobb's Papers. North Carolina Division of Archives and History,
        Raleigh, NC.

O'neal, Calvin
1976   *The Story of Ocracoke Island: A Hyde County bicentennial*. Walsworth Publishing,
        Charlotte, NC.

O'Sullivan, Aidan and Colin Breen
2004   *Maritime Ireland: An Archaeology of Coastal Communities*. Tempus, Glouceestershire,
        UK.

Ormsby, Timothy
2004   *Getting to Know ArcGIS: Desktop*. ERSI Press, London, UK.

Parker, A.J.
2001   Maritime Landscapes. *Landscapes* 1:22-41.

Price. Maribeth Hughett
2006   *Mastering ArcGIS*. McGraw-Hill Compaines, Inc., New York, NY

Runyan, Timothy J., Frank Cantelas, Michael Overfield, Kelly Gleason, Russell Lewis, Meredith
Hartford and Lauren Hermley
2003   Final Report: Ocracoke Remote Sensing Survey. Report to National Oceanic and
        Atmospheric Administration Office, Sliver Springs, MD. From Maritime Studies
        Program, East Carolina University, Greenville NC.
2005   Ocra Shipwreck Database and Remote Sensing Survey. Report to National Oceanic and
        Atmospheric Administration Office, Sliver Springs, MD. From Maritime Studies
        Program, East Carolina University, Greenville NC.

Schoenbaum, Thomas J.
1982   *Islands, Capes and* Sounds. John F Blair Publisher, Winston-Salem, NC.

Schortman, Edward
2012   A*rchaeological Theory in Practice*. Left Coast Press Inc., Walnut Creek, CA

Sheppard, James and Gary Walton
1972   *Shipping, Maritime Trade, and the Economic Development of Colonial North America.*
        Cambridge University Press, New York, NY

Skowronek, Russell K., and Charles R. Ewen.
2006   *X Marks the Spot: the Archaeology of Piracy*. University of Florida, Gainesville, FL.

Snyder, Rob
2010   SALVAGE AND REGENERATION. *Shima: The International Journal of Research into Island Cultures* 4(2):98-107.

Stick, David
1952   *Graveyard of the Atlantic*. University of North Carolina Press, Chapel Hill, NC
1958a   History in Your Own Backyard. *The North Carolina Historical Review* 35(1): 1-10.
1958b   *The Outer Banks of North Carolina*. University of North Carolina Press, Chapel Hill, NC
1970   *Dare County: A Brief History*. North Carolina Department of Cultural Resources, Raleigh, NC

Sullivan III, Alan P.
2008   *Archaeological Concepts for the Study of the Cultural Past*. The University of Utah Press, Glen Canyon, UT

University of North Carolina
2016   North Carolina Maps. University of North Carolina Libraries, Chapel Hill < http://www2.lib.unc.edu/dc/ncmaps/>.

Weslager, C.A.
1954   Place Names on Ocracoke Island. *The North Carolina Historical Review* 31(1): 41-49.

Westerdahl, Christer
1992   The Maritime Cultural Landscape. *The International Journal of Nautical Archaeology,* 21(1):5-14
1994   Maritime Cultures and Ship Types: Brief Comments on the Significance of Maritime Archaeology. *The International Journal of Nautical Archaeology*, 23(4):265-270.
1995   Traditional Zones of Transport Geography in Relation to Ship Types. In *Shipshape: Essays for Ole Crumlin-Pedersen, On the Occaision of His 60th Anniversary, February 24th 1995*, Olaf Olsen, Jan Skamby Madsen, Flemming Reick, editors, The Viking Museum, Roskilde.
2011a   The Binary Relationship of Sea and Land. *The Archaeology of Maritime Landscapes,* Ben Ford, editor, pp. 291-310
2011b   Conclusion: The Maritime Cultural Landscape Revisited. *The Archaeology of Maritime Landscapes,* Ben Ford, editor, pp. 331-344
2011c   The Maritime Cultural Landscape. In *The Oxford Handbook of Maritime Archaeology*, Alexis Catsambis, Ben Ford, and Donny Hamilton, editors, pp. 733-762, Oxford University Press, Oxford.

Wiggins, Lyna L. and Steven P. French
1991   *GIS: Assessing Your Needs and Choosing a System.* American Planning Association, Chicago, IL

Wilde-Ramsing, Mark
2009   *Steady as She Goes… A Test of the Gibbs Model Using the Queen Anne's Revenge Shipwreck Site,* Doctoral Dissertation, Coastal Resource Management, East Carolina University, Greenville, NC.

Zepke, Terrance.
2005   *Pirates of the Carolinas*. Pineapple Press Inc, Sarasota, FL.

Appendix A: List of Ocracoke Pilots from Hyde County Census

1850 Census

	Last Name	Frist	Sex	Race	Age
1.	Simpson	Amasa	M	W	45
2.	Howard	Abner	M	W	52
3.	Bragg	Thomas	M	M	53
4.	Gaskill	Thomas	M	W	37
5.	Williams	Francis	M	W	29
6.	Gaskill	Benjamin	M	W	32
7.	O'Neal	John	M	W	44
8.	Jackson	George	M	W	25
9.	O'Neal	William	M	W	28
10.	Gaskill	John	M	W	23
11.	Jackson	Howard	M	W	38
12.	Howard	Wallace	M	W	25
13.	O'Neal	Simon	M	W	38
14.	Jackson	Benjamin	M	W	30
15.	O'Neal	Martin	M	W	46
16.	O'Neal	Joseph	M	W	21
17.	Salter	Lemuel	M	W	60
18.	Fulcher	George	M	W	31
19.	Scarborough	Henry	M	W	27
20.	Gaskill	Richard	M	W	61

	Last Name	First	Sex	Race	Age
21.	Tolson	William	M	W	23
22.	Bragg	Oliver	M	M	52
23.	Bragg	Nataniel	M	M	43
24.	O'Neal	Thomas	M	W	30
25.	O'Neal	Benjamin	M	W	43
26.	O'Neal	William	M	W	23
27.	Stow	Caleb	M	W	48
28.	Ballance	Reuben	M	W	40
29.	Stow	Bond	M	W	40
30.	Oden	John	M	W	58
31.	Stow	William	M	W	38
32.	Stow	Wallace	M	W	35
33.	Gaskins	Zorobabel	F	W	49
34.	Gaskins	John	M	W	26
35.	Quidley	Richard	M	W	32
36.	Ballance	William	M	W	38

1860 Census

	Last Name	Frist	Sex	Race	Age
1.	Howard	Simon	M	W	40
2.	Howard	Amon	M	W	50
3.	Gaskins	Benjamin	M	W	49
4.	Ballance	William	M	W	50

5. Styron   Benjamin   M   W   30

1870 Census

	Last Name	Frist	Sex	Race	Age
1.	Bragg	Samuel	M	W	23
2.	Ballance	WH	M	W	40
3.	Scarborough	Bateman	M	W	38
4.	Jackson	Andrew	M	W	35
5.	Garrish	Simon	M	W	29
6.	Fulcher	Joseph	M	W	47
7.	Fulcher	Joseph	M	W	22
8.	Simpson	AW	M	W	21
9.	Williams	HB	M	W	21
10.	Ballance	David	M	W	35
11.	O'Neal	Thos	M	W	42

Appendix B: Historic Maps Used for Analysis
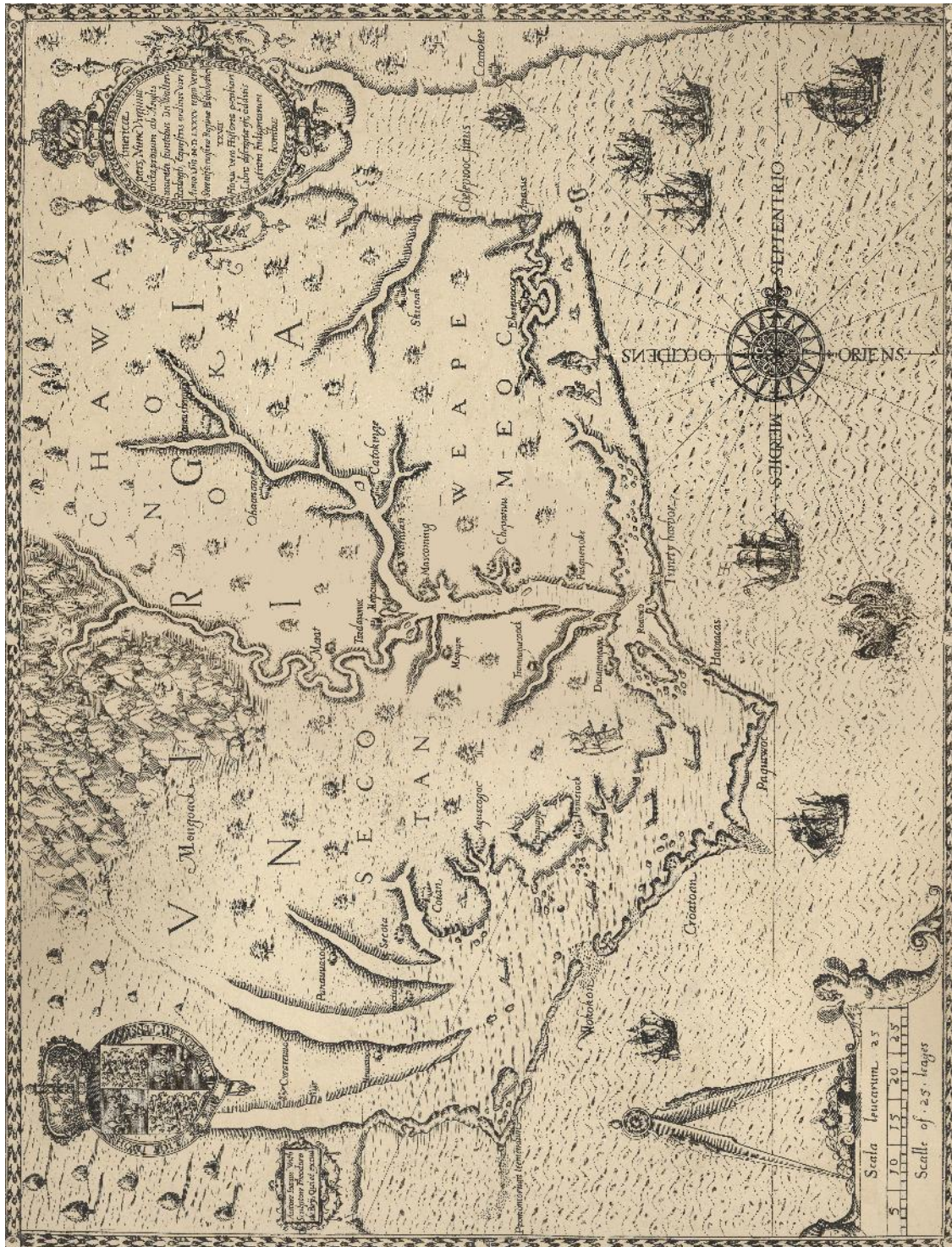
Americae pars, Nunc Virginia (University of North Carolina 2016).

A new discription of Carolina by the order of the Lords Proprietors (University of North Carolina 2016).
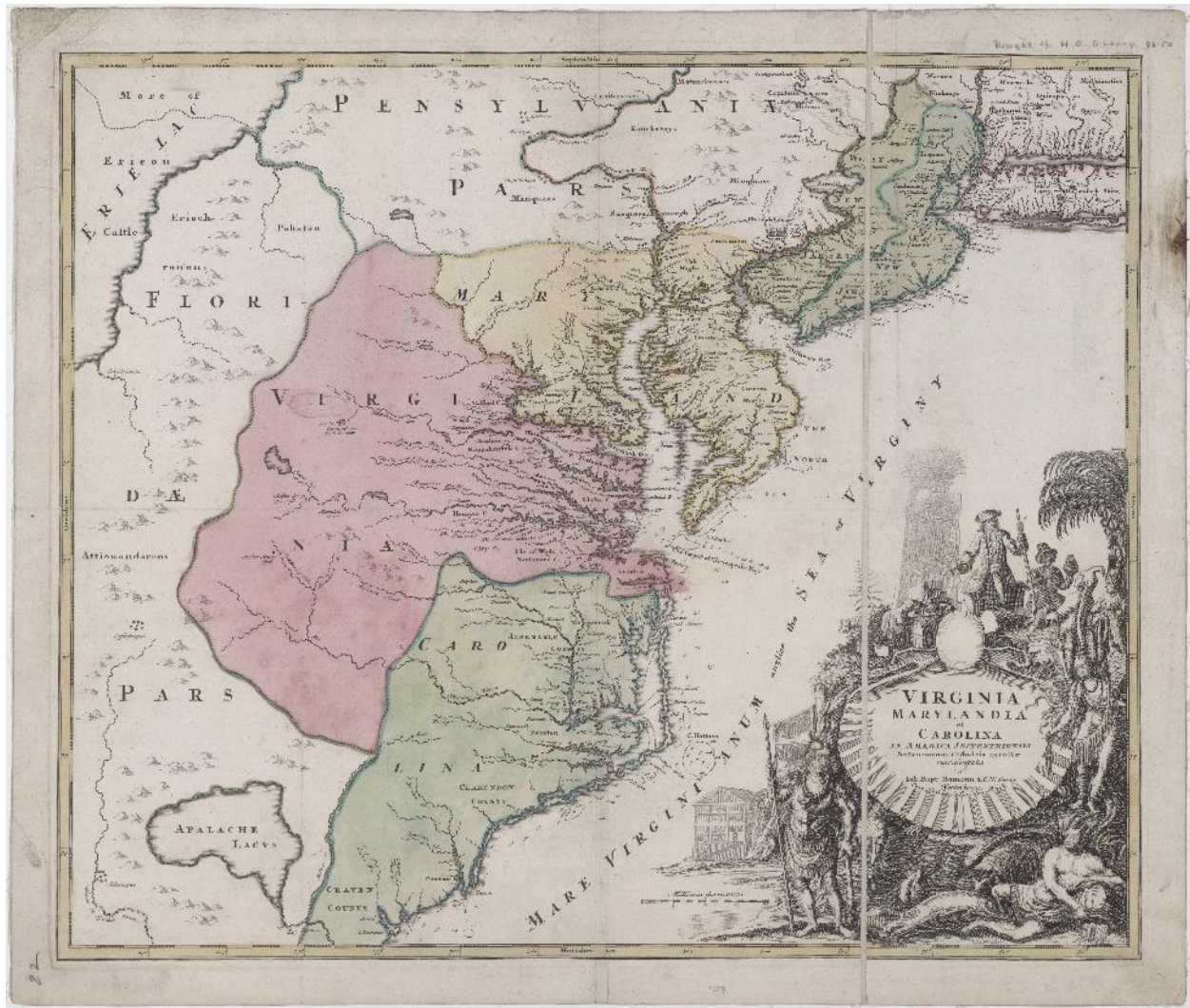
Virginia, Marylandia et Carolina: in America septentrionali Brittannorum industria excultae
(University of North Carolina 2016).

Partie meridionale de la Virginie et la partie orientale de la Floride dans l'Amerique Septentrionale suivant les memoires les plus exacts de ceux qui les ont decouvertes de nouveau mises en lumiere (University of North Carolina 2016).

Partie de l'Amerique Septentrionale (University of North Carolina 2016).
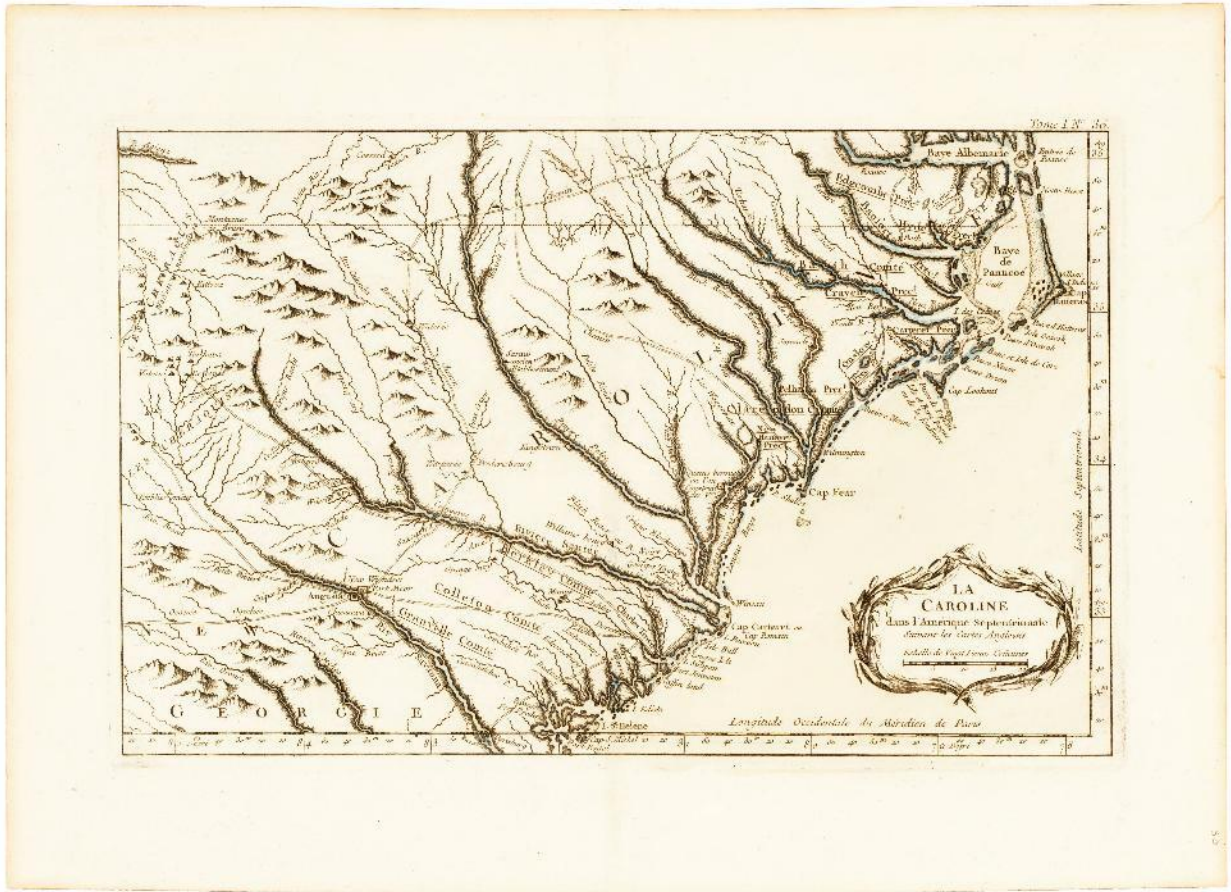
La Caroline dans l'Amerique septentrionale: suivant les cartes angloises (University of North Carolina 2016).

A Compleat map of North-Carolina from an actual survey (University of North Carolina 2016).
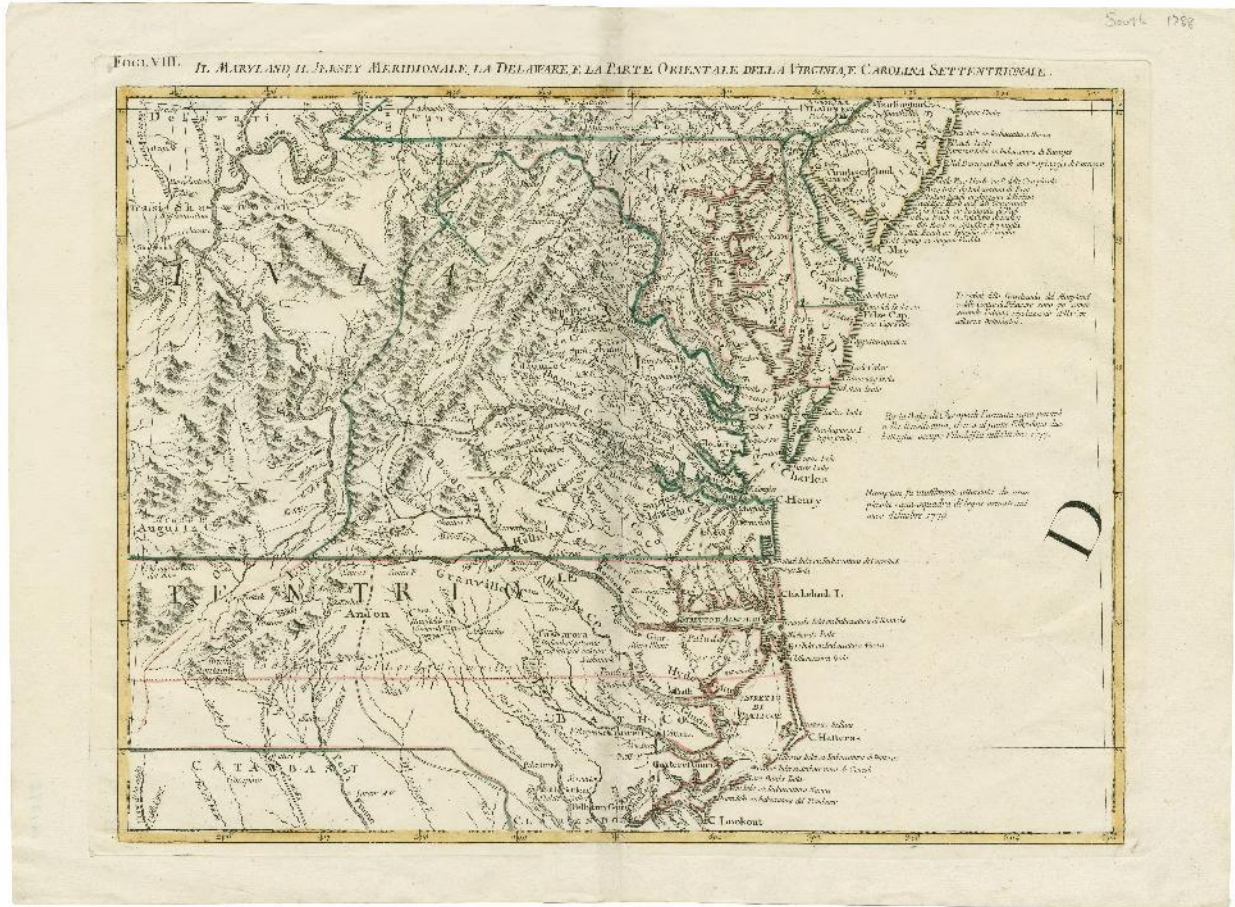
Il paese de' Cherachese, con la porte occidentale della Carolina Settentrionale, e della Virginia (University of North Carolina 2016).
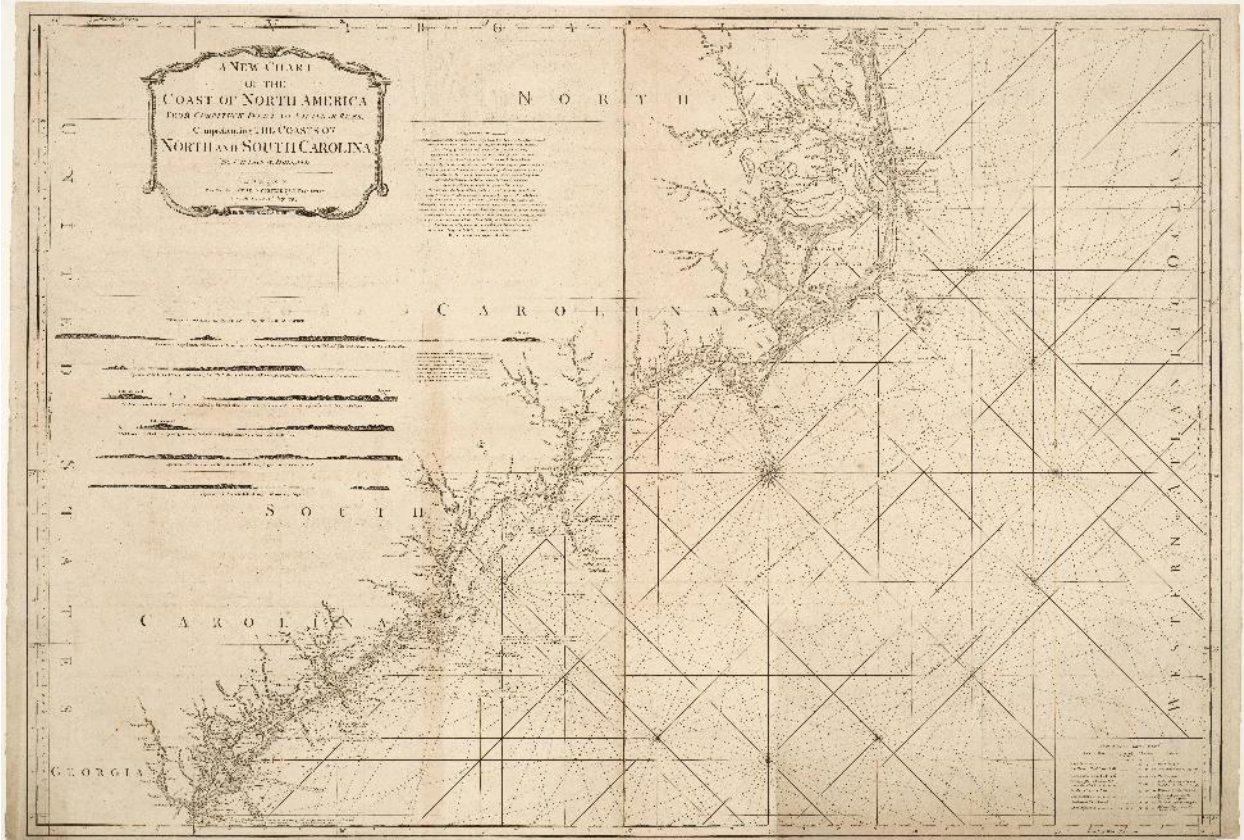
North-Carolina (University of North Carolina 2016).

A new and general map of the Southern dominions belonging to the United States of America via North Carolina, South Carolina, and Georgia with the bordering indian countries, and the Spanish possessions of Louisiana and Florida. (University of North Carolina 2016).
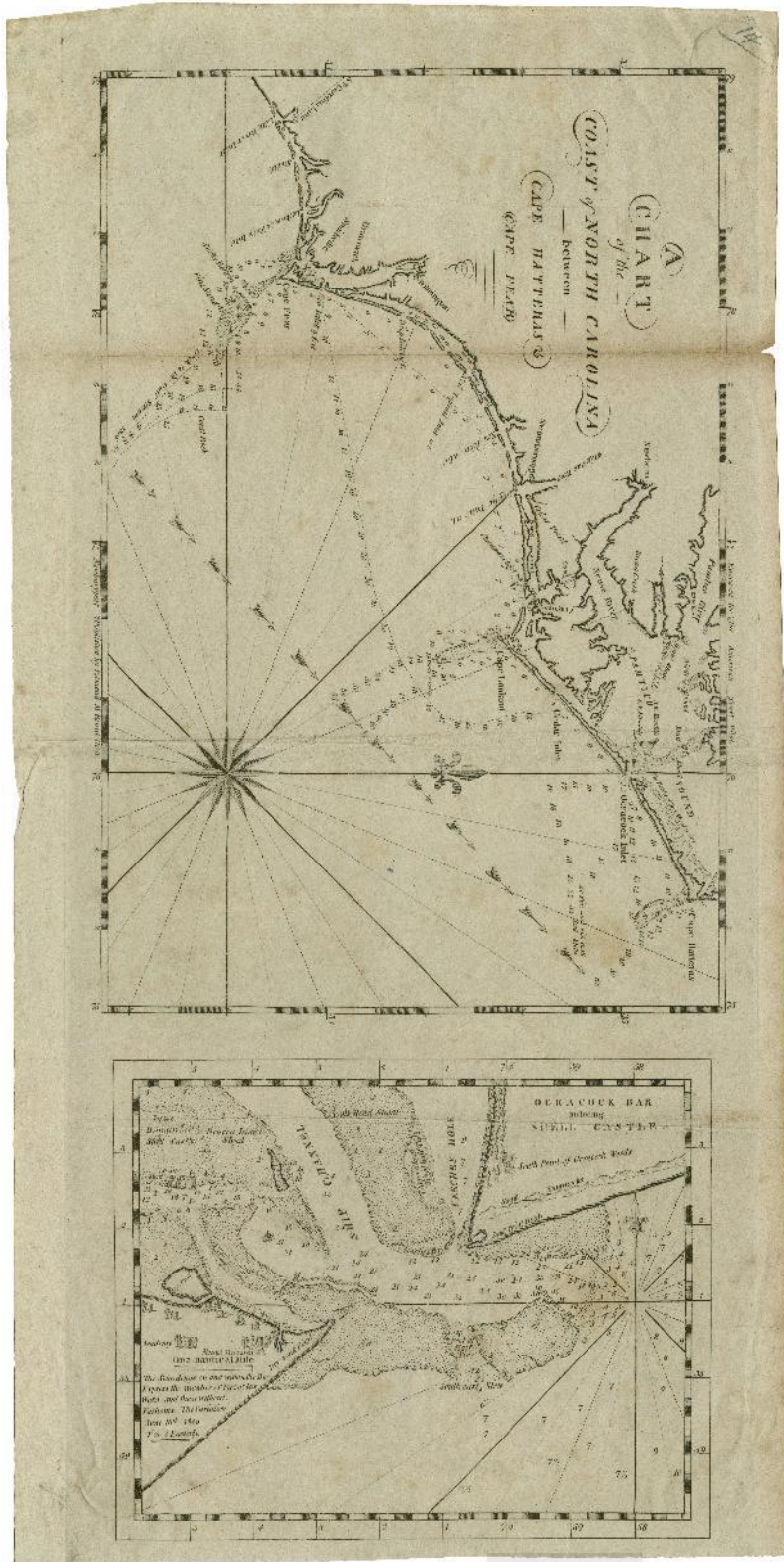
A chart of the coast of North Carolina between Cape Hatteras
& Cape Fear (University of North Carolina 2016).
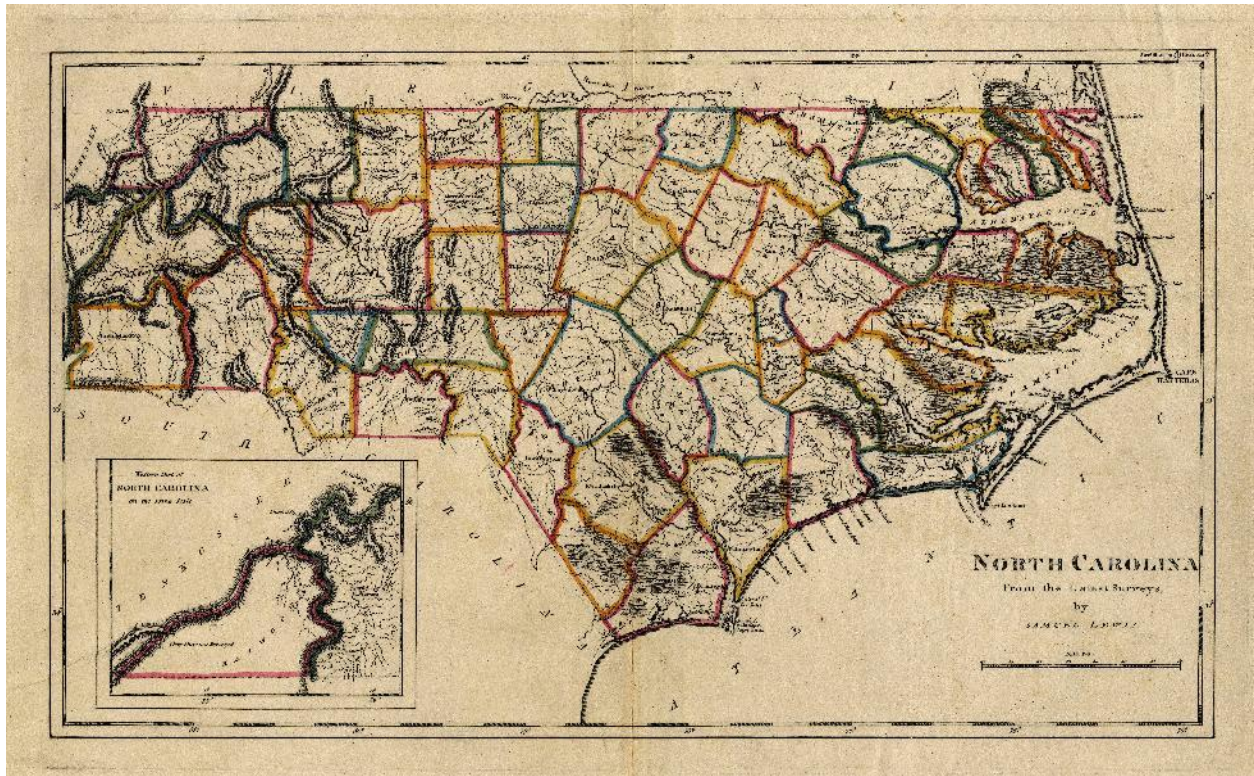
North Carolina from the Latest Surveys, by Samuel Lewis (University of North Carolina 2016).
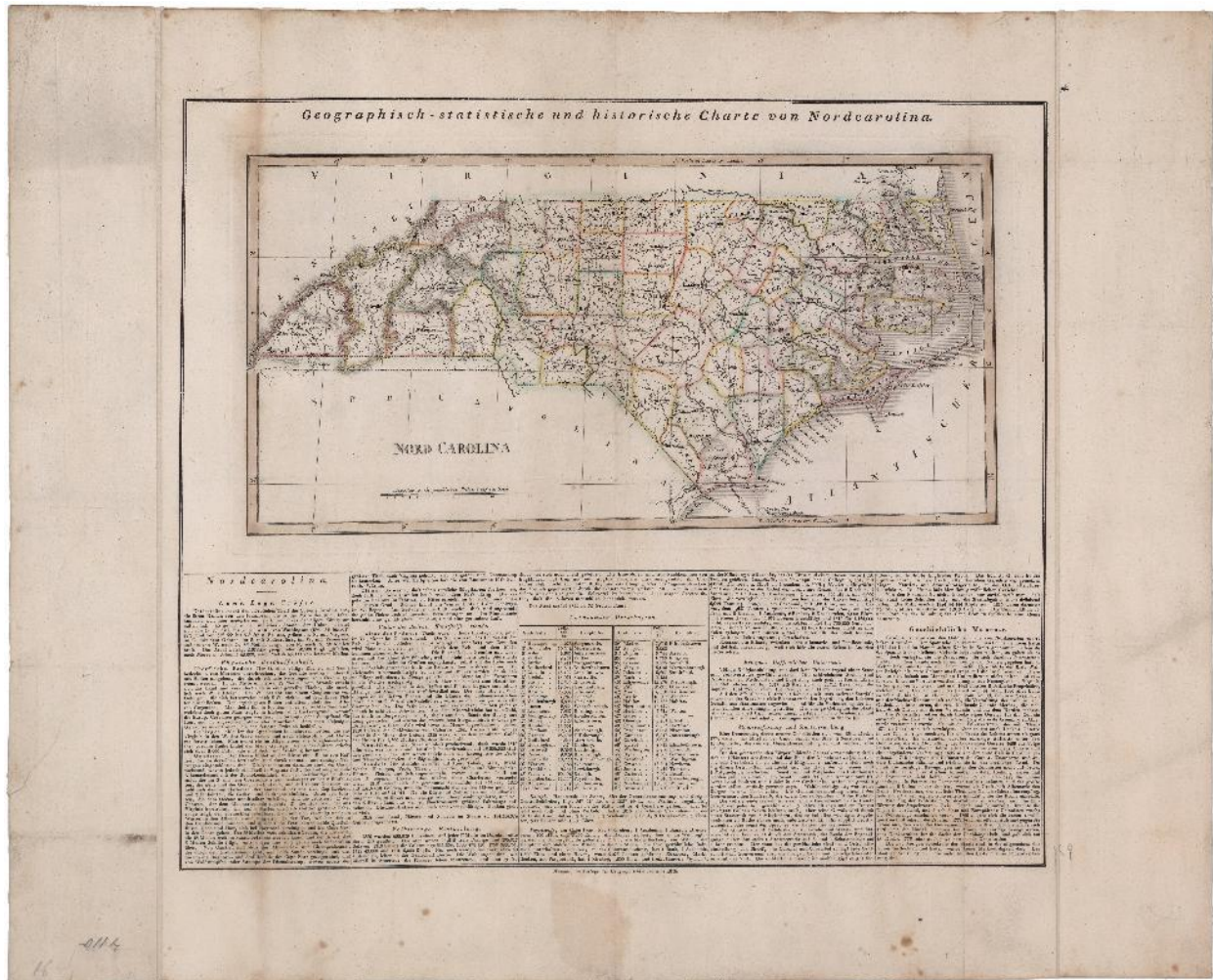
Geographisch-statistische und historische Charte von Nordcarolina (University of North Carolina 2016).
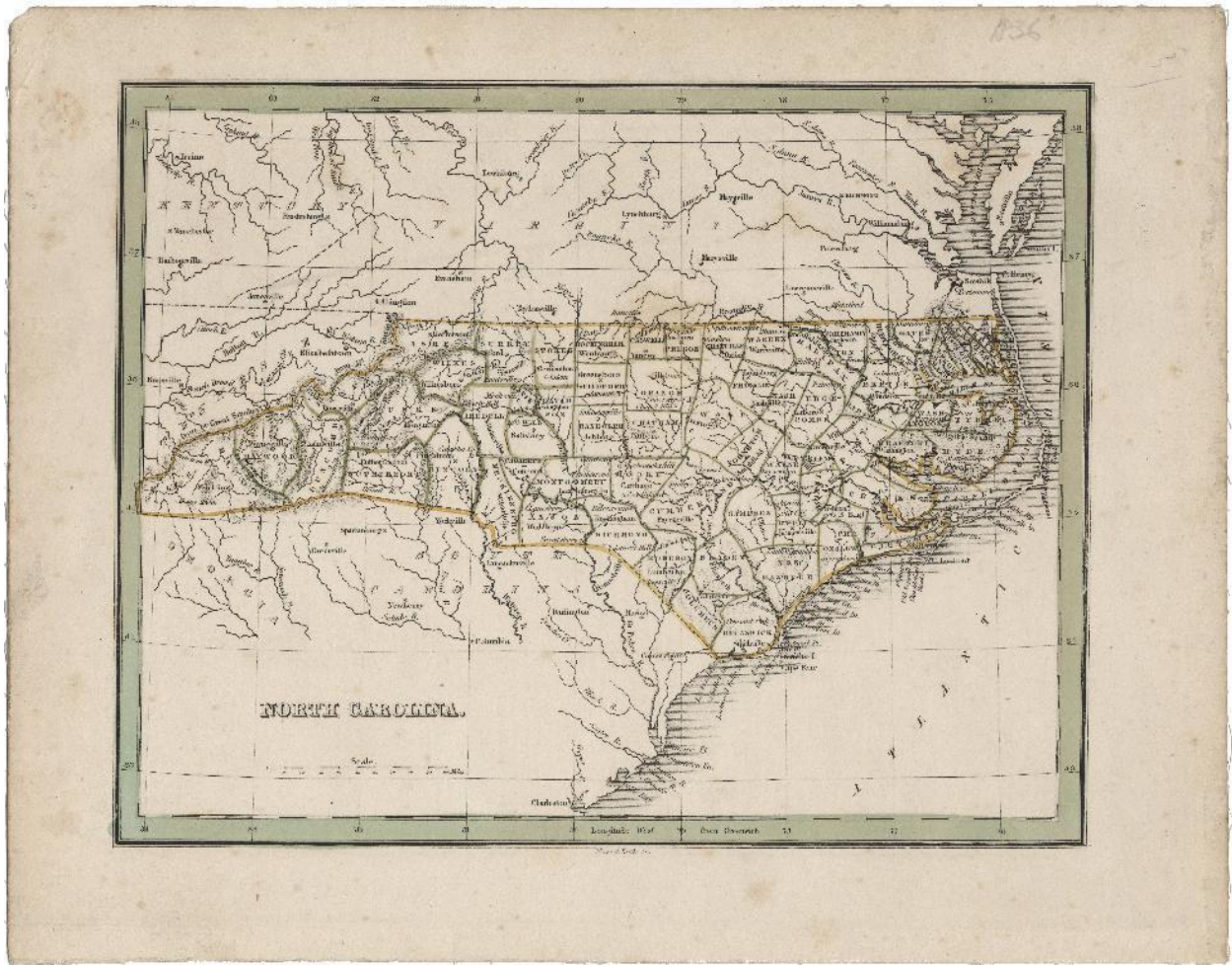
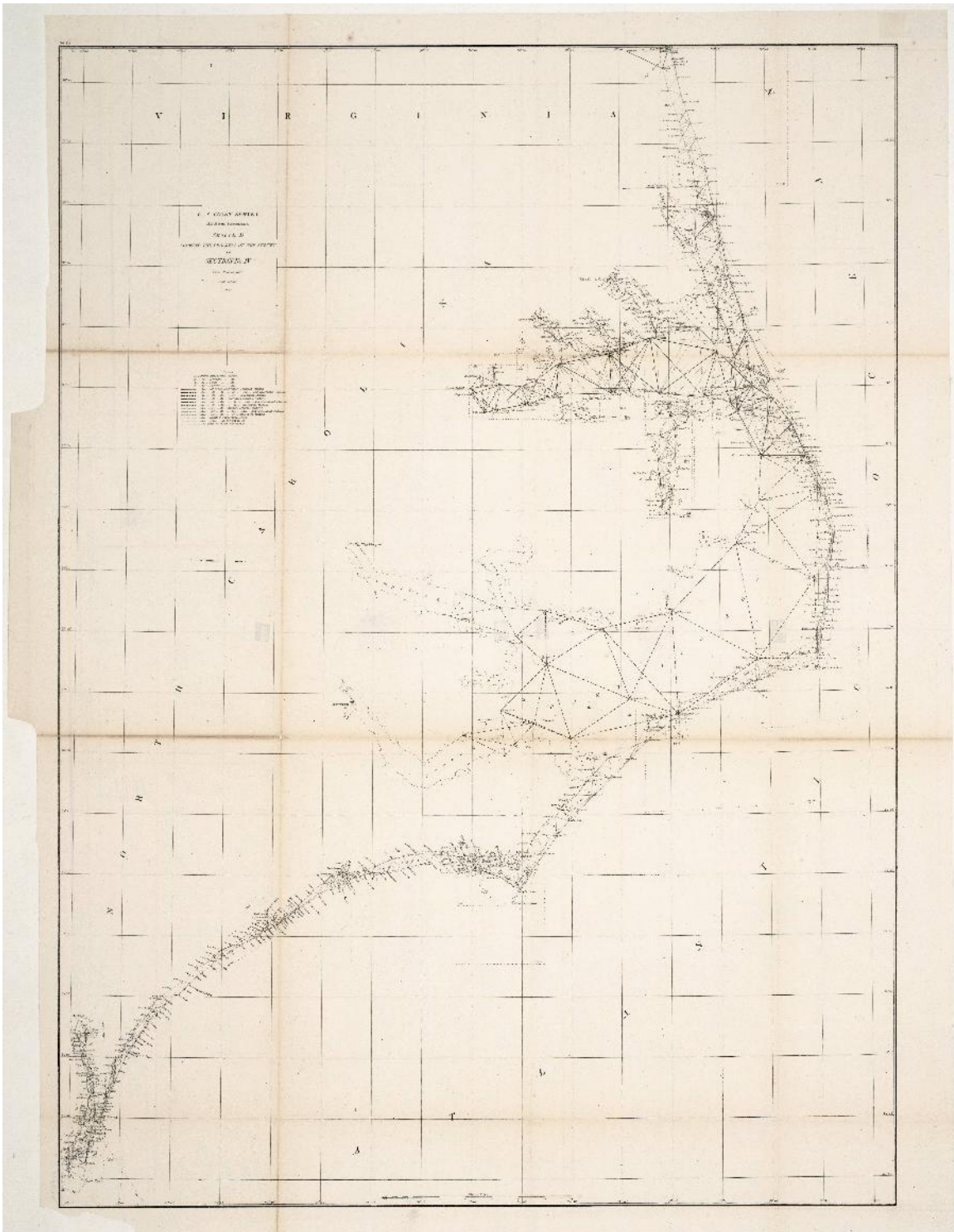North Carolina (University of North Carolina 2016).
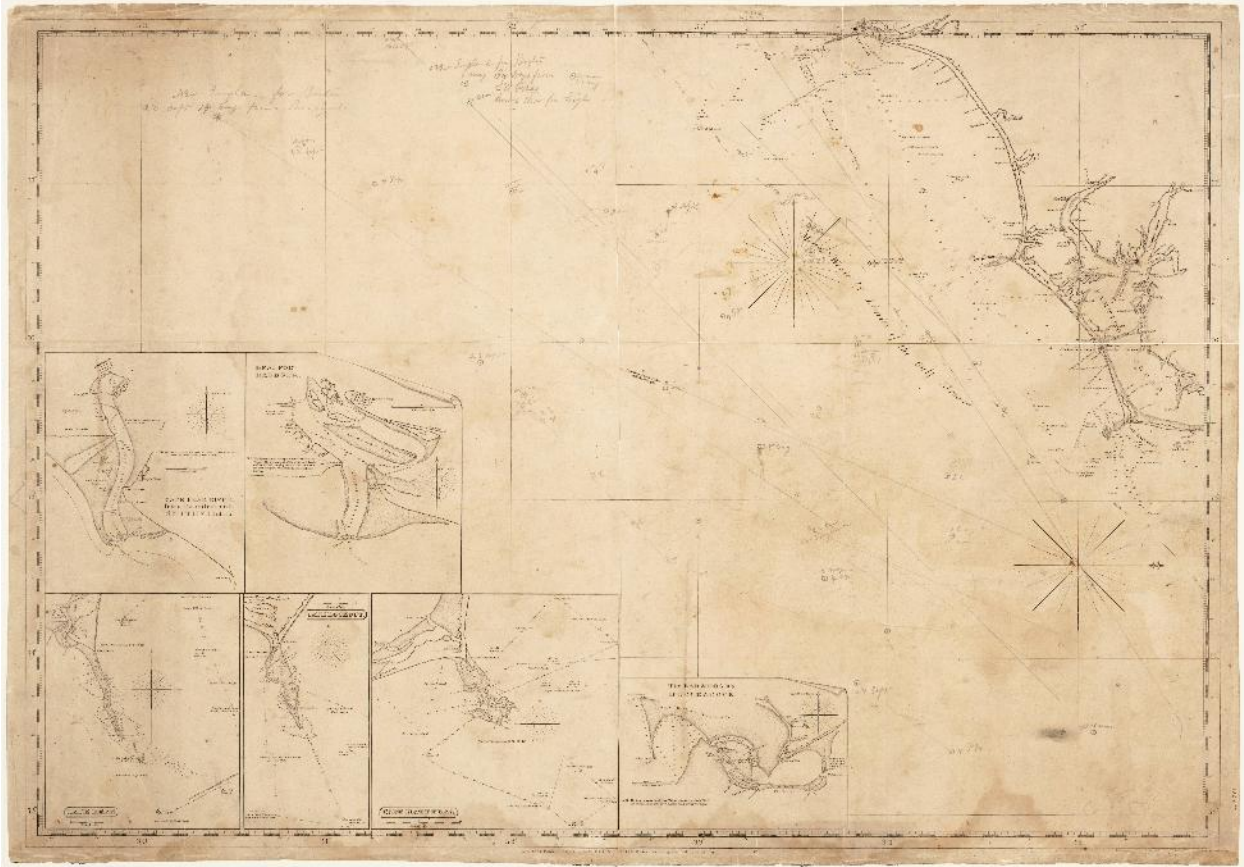
Coast of the United States of North America from Cape Hatteras to Cape Fear North Carolina (University of North Carolina 2016).
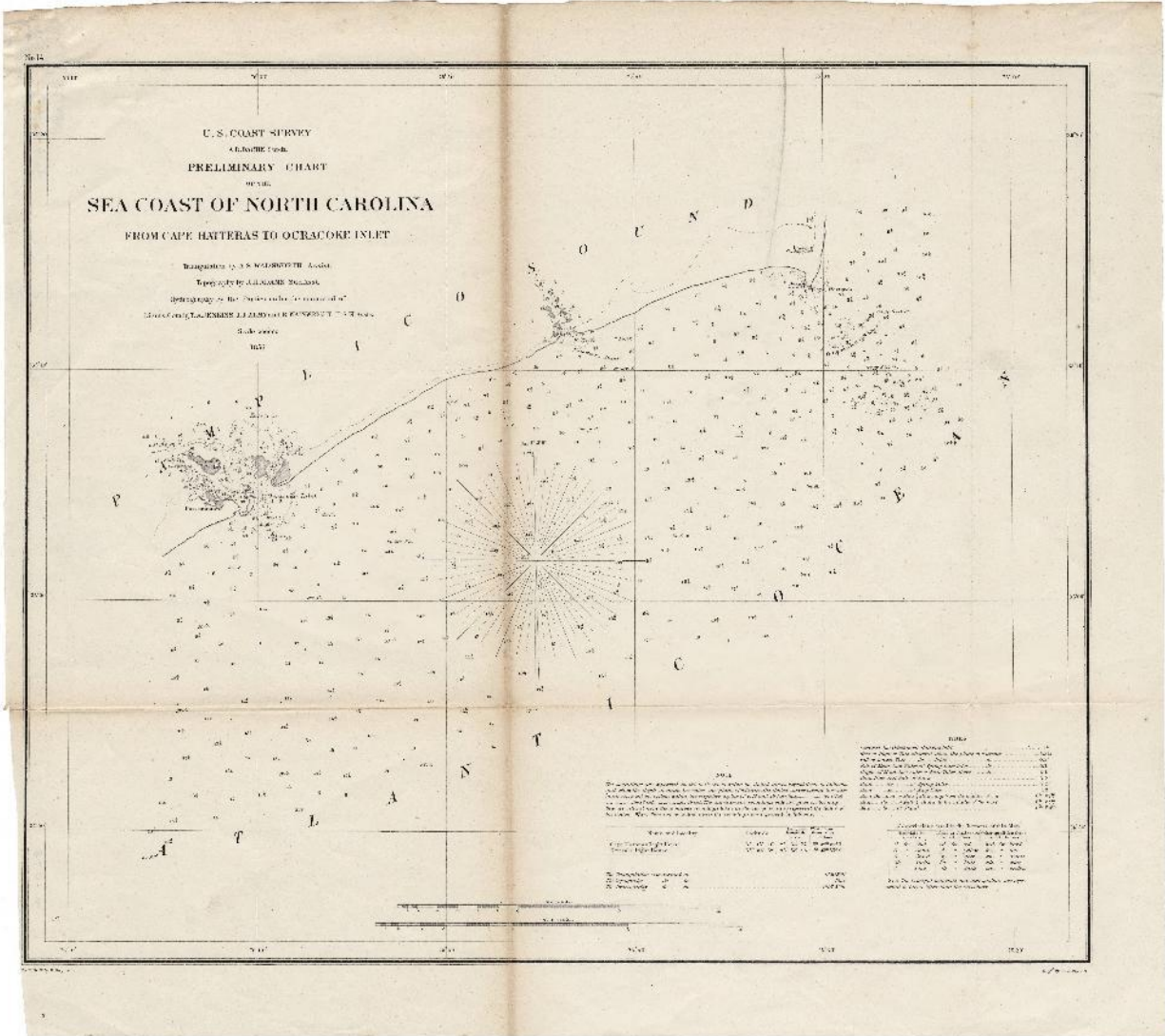
Preliminary chart of the sea coast of North Carolina (University of North Carolina 2016).
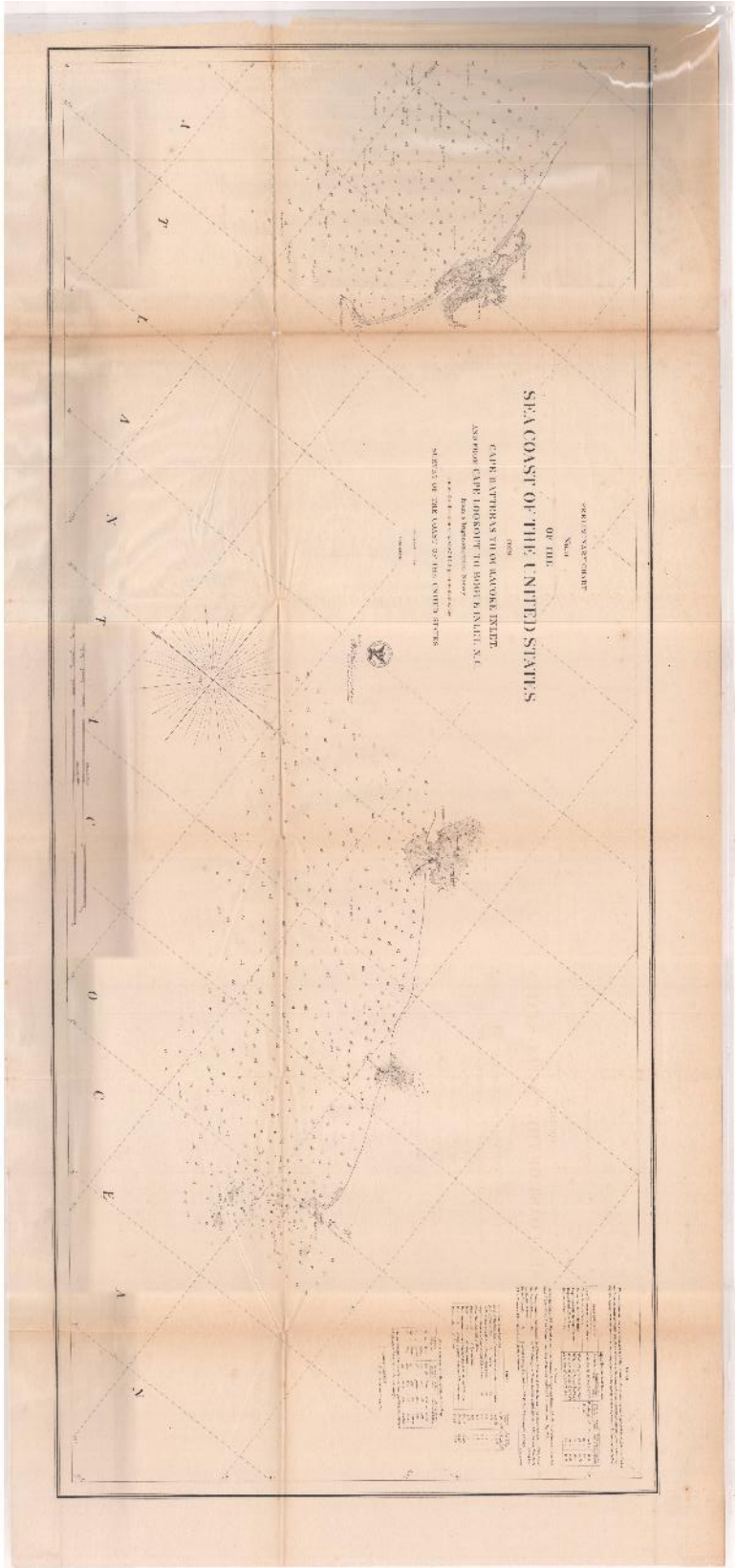
Sketch D showing the progress of the survey in section no. IV, from 1845 to 1857 (University of North Carolina 2016).

Preliminary chart No. 11 of the sea coat of the United States from Cape Hatteras to Ocracoke Inlet, and from Cape Lookout to Bogue Inlet, N.C. (University of North Carolina 2016)..
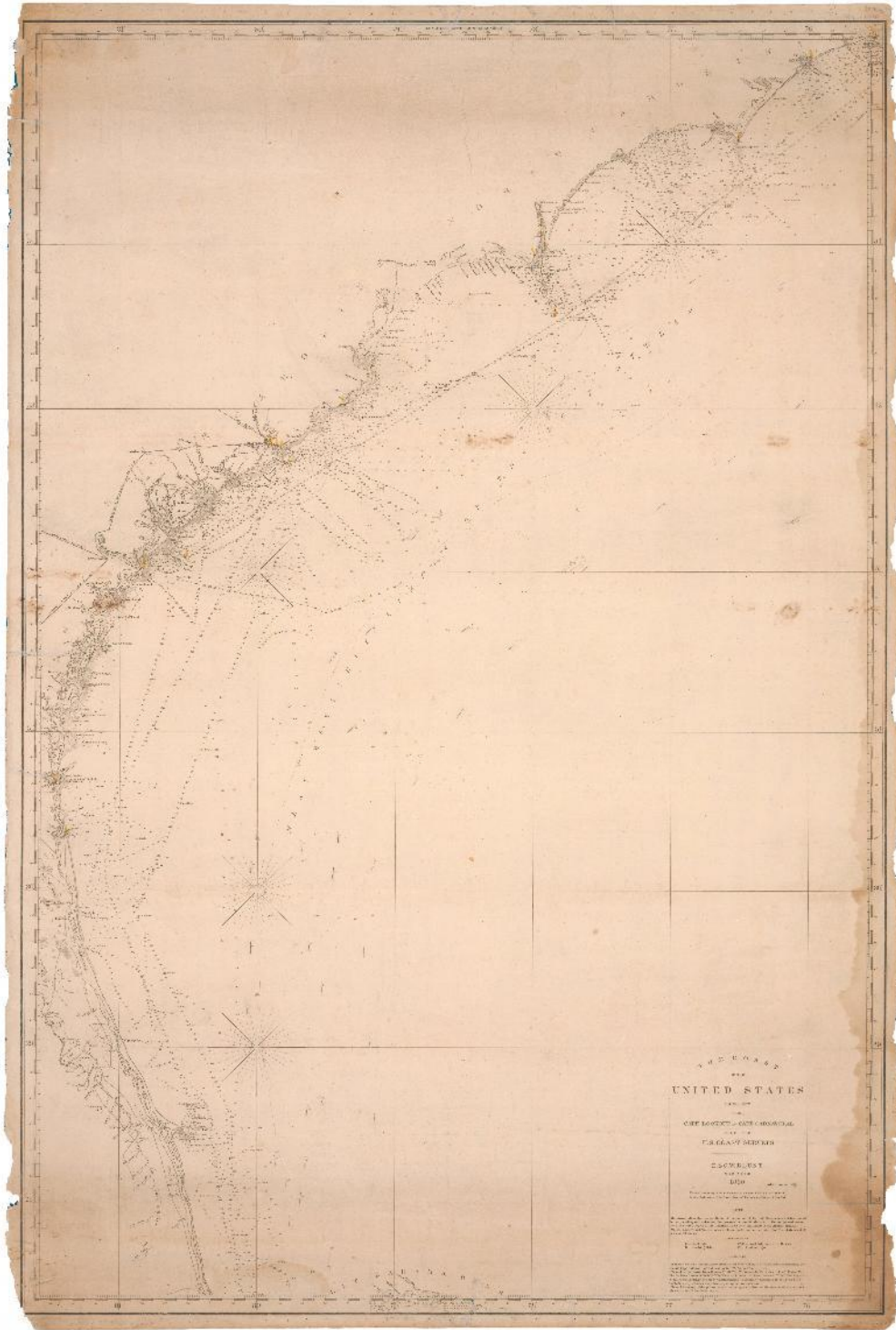
The coast of the United States, sheet no. 2: from Cape Lookout to Cape
Carnaveral, from the U.S. coast surveys (University of North Carolina 2016).

Coast of North Carolina & Virginia (University of North Carolina 2016).