Abstract

The Central Places of Albemarle Sound: Examining Transitional Maritime Economies through Archaeological Site Distribution

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Historical evidence shows that the Albemarle Sound region has a long history of maritime trade. As technologies improved, early settlers moved beyond simple subsistence farming to expand extensive maritime trade networks along the coast as well as to Europe and the West Indies. Ports along the sound and the rivers flowing in to it acted as economic distribution centers for surrounding agrarian communities. Through the centuries, this region's economic systems evolved, undergoing transitions in transportation and trade practices. This thesis analyzes over two hundred vessels lost in the Albemarle Sound region to emphasize signatures of the economic transitions found in the archaeological record. Trends highlighted in the database are also compared to the historical record in an effort to gain a more comprehensive understanding of the maritime economic history of the Albemarle Sound region.

The Central Places of Albemarle Sound: Examining Transitional Maritime Economies through Archaeological Site Distribution

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Chapter 1: Introduction

The Albemarle Sound, a body of water found in northeastern North Carolina, was an important landscape early in European colonization and saw great activity during the state's development. Due to the many rivers, creeks, marshes, and swamps overland travel in the Albemarle Sound region was cumbersome and slow until the very recent past, meaning water transportation was both a common way of life and a necessity. The duration of habitation and local dependence on watercraft created a long maritime tradition, making Albemarle Sound a choice candidate for studying how the maritime archaeological record may reflect the economic development of the region.

The study area includes eight counties around Albemarle Sound and focuses on the development and economies of each (Figure 1). Walter Christaller developed Central Place Theory, which describes a town as the economic hub of a region. By examining the many layers of a town's development, such as transportation, natural landscape, and population, further regional settlement and economic development patterns can be seen. All eight counties of this study area are assigned a Central Place which serves as the focal point of the historical research.

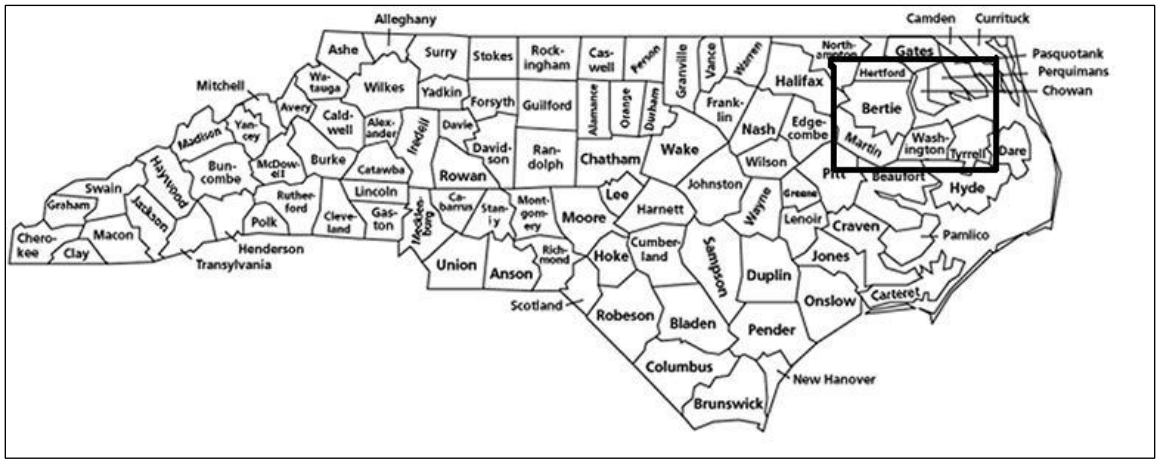

FIGURE 1. A map of North Carolina showing the approximate project area (Map by author, 2010.)

A geodatabase of 249 vessels, either shipwrecked or abandoned, in Albemarle Sound, Edenton Harbor, and the Pasquotank, Perquimans, Chowan, Roanoke, and Scuppernong Rivers serves as the dataset against which historical records and economic trends are compared against to assess shifts in Albemarle Sound's maritime economy. This database, *The Albemarle Sound Cultural Landscape Database* (ASCLD), was created by Franklin Price (2006), and later expanded by Adam Friedman (2008), during their research on the Roanoke River. The comparative analysis of the ASCLD, expanded to include the aforementioned bodies of water, involves both statistical and geo-spatial techniques to identify trends and patterns of loss through the archaeological record. Results of these analyses will demonstrate behavior and choices contributing to the economic transitions occurring throughout the region's history.

Research Questions

The study of cultural material plays a crucial role in understanding the lives of past cultures, often giving more insight than written accounts can provide. Larry Murphy (1983:69) reasons, "Archaeological research is often concerned with aspects of human behavior undocumented by written history and provides the only means of study of the unwritten database." This becomes especially true when the history concerns groups grossly under-represented in the written word; the illiterate, the poor, slaves, native peoples, and children. Just as it is crucial for historians to acknowledge the importance of material culture, archaeologists must have a firm understanding of history. Used together, the maritime historical record and the maritime archaeological record can build a better understanding of the past than either can do alone, for "the Archaeology of shipwrecks should not be merely the embellishment of the

maritime historical record, but the elucidation of otherwise unattainable aspects of human behavior" (Murphy 1983:69).

The Albemarle Sound region has a relatively well established written history concerning its maritime activities. This thesis will attempt to determine whether the archaeological record reflects, refutes, or redefines the economic evolution of the Albemarle as defined by historical records, with a focus on region's Central Places. In order to answer this primary question, several secondary questions must be addressed, including:

- What effect does the surrounding natural and cultural landscape have in determining the importance and success of the Central Places along the Albemarle Sound?
- What role did the distribution of natural resources have on economic, social, and technological development of Central Places along the Albemarle Sound?
- What are the patterns of vessel loss? How do patterns change over time? Do they mirror changes in the landscape?
- Does each Central Place/river system have a distinct pattern? Do they correlate with each other?
- To what degree is wreck location and incidence a reflection of changes within the Albemarle Sound region?
- What role did river and harbor improvements play in determining patterns of loss? Have they altered the archaeological record?

The ASCLD is currently a collection for both archaeologically and historically recorded vessels lost or abandoned in the Albemarle Sound region. A majority of the vessels have been recorded historically but not found archaeologically. Information on these lost vessels came from numerous sources including enrolment records, newspapers, and compilation lists of North Carolina shipwrecks. Some lost vessels have been identified through archaeological survey methods including the use of sonar and magnetometer. Of the 249 vessels in the ASCLD, 70 were recorded archaeologically, but 149 historically recorded vessels are still considered cultural resources on the assumption that the vessel remains still exist somewhere under the water. All

the vessels are, or at some point were, cultural resources, therefore it is valid, in the scope of this thesis, to claim the entire ASCLD as a representation of the maritime archaeological record.

Format

The structure of this thesis is designed to reflect the course of the investigation, with each chapter representing one step of the overall research design. The following chapters explore theoretical approaches and precedence, historical and archaeological research, and statistical and geo-spatial analyses of the data collected.

Chapter Two reviews research conducted by others in similar environments or using similar approaches and techniques. Recognizing their observations and predictive models brought insight to questions this thesis addresses. A comprehensive examination of several theoretical works is also included here. The ideas of Christer Westerdahl, Walter Christaller, and other regional or thematic researchers are combined to create a framework for interpreting the Albemarle landscape and the human behavior displayed in the archaeological record.

Chapter Three describes the methodology used during the three major aspects of this project; archaeological and historical research, and data analysis. The archaeological research involved sonar and magnetometer surveys on the Roanoke and Perquimans Rivers and Edenton Harbor to collect data for inclusion in the ASCLD. The historical research added new shipwrecks to the existing database and also elaborated on the historical details of existing records. Historical information concerning the counties and Central Places in the project area was also gathered. The data analysis involved using computer software to compile vessel data into graphs and maps to properly evaluate statistical and geo-spatial information.

Chapter Four describes a history of the study area, concentrating on individual counties with an emphasis on their Central Places. The region has a history beginning in prehistoric times,

progressing through European colonization and the development of the United States and continuing into modern times. This thesis focuses on European establishment and aspects of the region's economic growth to the present day. When relevant, some military history is discussed from a maritime perspective.

The analytical portion of the thesis begins in Chapter Five with a statistical analysis. The data in the ASCLD is broken down into three major themes- manner of loss, technology, and trade. Graphic representation of the statistical queries allows for trends and patterns within the dataset to surface. The patterns of loss provide evidence of human behavior within the study region.

Chapter Six uses the same major themes as the previous chapter while providing maps to represent vessels of the ASCLD in their final location in space. By geo-referencing watercraft, they can be given context in the physical and cultural landscapes. This provides opportunities for revealing other trends based on human behavior and choice.

The last chapter concludes the findings of this research. Answers to the research questions are reached by comparing results from Chapters Five and Six with the region's history as outlined in Chapter Four.

Boundaries and Limiting Factors

This thesis frequently refers to the project area as "the Albemarle Sound region," but in truth the project area is only part of the Albemarle Sound region. This study's initial eastern boundary emerged from a remote sensing survey conducted on the Perquimans River in the summer of 2006. The eastern edge of the study area was later extended to the Pasquotank River because of its association with the Dismal Swamp Canal and the impact the opening of the canal

had on the region. The westernmost end of the Roanoke River makes up the western border of the study area.

In the course of any research, unexpected variables and challenges occur. Perhaps the largest challenge within this study is the large amount of incomplete vessel data in the ASCLD. The database has been designed with multiple fields so that data can analyzed from many perspectives. Of the 249 entries, no one vessel record contains a complete dataset. In some cases, the gaps leave analyses open to criticism for conclusions based on small datasets. The decision was made to go forth with these analyses understanding that future research might further develop or contradict theories presented here.

The archaeological research gives cause to many limitations in this study, more specifically, the size of the archaeological data sample. Only a small percentage of the vessels in the ASCLD have been examined by archaeologists. Of those that have received archaeological evaluation, many have been viewed only via sonar imagery. Ground-truthed watercraft were examined using a reconnaissance dive only. Very few vessels have been the subject of archaeological survey. This becomes an obstacle when trying to obtain archaeological evidence of economic change because details such as signs of repair or salvage can be difficult to detect in a brief inspection.

Along with the need for more intensive archaeological investigations, further Phase I survey would have enhanced this thesis and the ASCLD. The Roanoke River is by far the most completely covered, but even that is biased towards the river mouth and only as far west as Halifax, while little work has been done in the northern portions of the river. The Perquimans River and Edenton Harbor are the only other areas in the study region that were examined by remote sensing survey. A small number of vessels in the ASCLD were discovered by prior

surveys conducted by the North Carolina Underwater Archaeology Branch (UAB). These surveys focused on portions of the rivers near ports. Data for the Chowan and upper Scuppernong River and the Albemarle Sound could not be obtained.

Even with these data limitations, the ASCLD contains enough information to make fair and supported conclusions regarding the research questions addressed by this study. With the archaeological record compiled into a single source, the ASCLD, the economic evolution of the Albemarle Sound region can be observed, and ultimately compared to, the history as currently written (Brown 1956, 1970a; Stanley 1956; Markham [1960s]; Davis 1963; Merrens 1964; Paramore 1967; Washington County Historical Society 1970; Manning 1977b, Watson 1982, 1987; Allen 1993).

Chapter 2: Theory

Introduction

Maritime activities have held great importance in the pursuit of economic gain throughout history. As Larry Murphy (1983:65) points out, "Many societies rose or declined as a direct result of whether they successfully utilized ships for subsistence, transport, and protection." Over time, activities and traditions change, as do cultural landscapes and economic conditions. This chapter will outline theoretical approaches and the previous research used to guide the structure of this thesis in its attempt to better understand economic transitions of the Albemarle Sound region through maritime archaeological research and analysis.

By focusing on the Albemarle Sound's region's economic transitions, this research uses the "broadened thematic base of study" described by Richards (2008:39), which says that maritime archaeologists need to venture further from their site-specific, particularistic roots and into generalist diachronic studies so that they might explore deeper anthropological questions. Such comparative studies are typically directed by a specific theme and carry a self-inflicted regional boundary (Richards 2006:45-46). Several thematic and regional studies influenced the research design and structure of this thesis, which builds upon their methodology, investigation objectives, and analysis practices.

While previous thematic studies provide supporting data and examples of structure, they often have no more than an implicit use of theory. The theoretical foundation for analyzing the ASCLD is based on Walter Christaller's Central Place Theory (1966) and Christer Westerdahl's Maritime Cultural Landscape (1992). These theories help define the self-inflicted regional boundary described by Richards, while also allowing a broader interpretation of the ASCLD vessels in their geographical location.

Thematic and Regional Studies

It has been nearly thirty years since Gould (1983), Watson (1983), Lenihan (1983), and Murphy (1983) set forth a challenge in *Shipwreck Anthropology,* calling on maritime archaeologists to incorporate a more anthropological approach to the study of shipwrecks. Richards' (2006) observation of thematic/regional trends illustrates that a shift to more comparative approach is occurring. Sources like Souza's *The Persistence of Sail in the Age of Steam* (1998), Duncan's *Signposts in the Sea* (2000), and Richards' *Ships Graveyards* (2008) used a comparative approach while conducting a themed investigation of cultural changes found within a vessel assemblage within a region. Riverine studies such as Price (2006) and Friedman's (2008) work on the Roanoke River, North Carolina, Shomette and Eshelman's study of the Patuxent River in Maryland (1998), Kenderdine's examination of historic shipping on the Murray River (1994, 1995), and Babits and Kjorness' work on the Pamlico and Pungo Rivers, North Carolina (Babits et al. 1995, Babits and Kjorness 1995) all influenced this study in terms of structure, field research design, and analysis techniques. Moreover, these thematic and regional studies all share a common premise. They choose a comparative approach to examine a database of vessel losses, incorporating aspects of the landscape by which they are then able to extract tendencies of human behavior. These anthropological findings showcase patterns not available in the historical record.

Nathan Richards' work on discarded watercraft in Australia contributes to the organization and understanding of data gathered within the ASCLD (Richards 2002, 2008; Richards and Staniforth 2006). He defines the difference between shipwrecks and discarded (abandoned) watercraft by stating that a shipwreck typically involves a "catastrophic event" while an abandoned vessel is "deliberately thrown away or disposed of." The reason he draws

this distinction is because abandoned watercraft can give insight on regional economies during the vessels use-life and the time of its demise (Richards 2008:7, 188). Understanding this terminology and the economic information that can be gleaned from wrecked or abandoned vessels is crucial to the ASCLD analysis, as the theme of this study is to build an understanding of economic transitions in the study area through the archaeological record.

Donna J. Souza (1998) studied six ships in the Dry Tortugas, examining archaeological remains to answer questions concerning sailing vessels during the transition period to steam propulsion. Her thematic investigations centered on the use of steam power on watercraft in capacities other than propulsion, high-risk alternatives decisions, and other innovations and developments in deck machinery (Souza 1998:123-131). Souza's team used previous studies and historical research to supplement their comparative study and then began "to formulate generalizations about the relationship between culture, technology, and resistance to change in the nineteenth century merchant marines" (Souza 1998:123). In other words, "the study represents a comparative approach to the interpretation of shipwreck sites in relation to the cultural system that produced them" (Souza 1998:131).

This thesis uses a similar theology in creating the ASCLD, gathering the research of many into a single database before analyzing vessels database in the context of the Albemarle Sound cultural landscape to which the assemblage has direct ties. Comparisons to the historically accepted economic trends can be made by examining ship construction details, dimensions, and cargoes. The how, why, and when of wrecking events can also be determined from this information. This is similar to Souza's work of joining specific vessel data to help support her hypothesis of a much larger theme, in which each vessel is only one representative sample of a much larger event or trend (Souza 1998). The data gathered in the ASCLD is used to make

generalizations about the Albemarle's economic transitions as defined by the archaeological record.

Bradley Duncan (2000:1) offers another example of a regional study using a database of historical particularist studies. He uses his data in conjunction with cultural landscape theory to derive a methodology for identifying and analyzing "seascapes," a term he uses for a specifically maritime setting (Duncan 2000:1). This study takes a similar approach to Duncan's work, using a database of shipwrecks in the context of the maritime landscape, though the ASCLD analysis is focused on maritime economy of the study region and less on the greater encompassing "seascape."

Two of the most valuable sources of previous riverine research include theses written by Franklin Price (2006) and Adam Friedman (2008). Both examine the assemblages of shipwrecks and abandoned watercraft found in the Roanoke River, North Carolina, an area included in this study. Both researchers undertook statistical and geo-spatial analyses of their regional datasets.

Price (2006) conducted a comparative study of an assemblage of both shipwrecked and abandoned vessels found in and along the Roanoke River that were lost between 1831 and 1975. He wanted to determine whether cultural change was reflected in anthropological trends derived from the assemblage (Price 2006:3). He used three themes in his analysis. His first category, manner of loss, showed extremely different results for vessels lost in wartime as opposed to those lost in peacetime. His second category, an analysis focused on technology and investigated the size of the Roanoke River to determine if there were noticeable constraints put on the watercraft dimensions. This inquiry led to no concrete conclusions. Finally, Price focused on trade and how changes in transportation affected watercraft deposition. He was able to show the considerable effect railroads had on maritime traffic (Price 2006:79-148).

Friedman's (2008:3) researched the Roanoke River searching for anthropological trends that supported themes of legitimation, risk, industrial locational convenience, and legal and illicit forms of commerce. Through this research he was able to form a model using statistical and spatial analysis to demonstrate formation of the Roanoke River cultural landscape. He found that the Roanoke River is made up of multiple, overlapping landscapes formed by "…varying perceptions of the utility of parcels of land but also in terms of legality" (Friedman 2008:151).

Using similar techniques of statistical and spatial analysis, this thesis builds upon Price and Friedman's research while expanding the study area. Just as they used the ASCLD to conduct their inquires, this study increases the dataset and addresses a new set of cultural questions regarding economic transitions as they relate to the Albemarle's Central Places.

Investigations of the ASCLD were also influenced by Shomette and Eshelman's investigations of "submerged cultural potentials" on the Patuxent River in Maryland (Shomette and Eshelman 1998:327). Prior to fieldwork, Shomette and his team conducted predictive modeling to identify high potential target areas. They then selected four transects based on the high probability for yielding historic shipwrecks, inundated terrestrial sites, and ships' graveyards (Shomette and Eshelman 1998:329-331). A similar Phase I preceded the field surveys conducted on the Roanoke and Perquimans Rivers for this thesis. The statistical analyses of their discoveries in which they broke down vessel losses by cause, type, and era, and thus created a representative model for most riverine systems in tidewater Maryland, was a particularly influential part of their pioneering survey (Shomette and Eshelman 1998:333-334). The analysis in Chapter 5 of this study uses their work as a template.

Sarah Kenderdine's (1994, 1995) work on Australia's Murray River proved useful as a guide in gathering and analyzing of vessels lost in a riverine setting. Her ultimate goal focused

on using data gathered to support a management strategy for terrestrial and submerged archaeological sites that had a direct relation to the use of the river as a transport system. Nonetheless, she described vessel placement and changes in technology as they pertained to behavior patterns, providing a good foundation from which to generate research questions and analyses pertaining to Albemarle Sound. Her observations concerning vessel dimensions and vessel proximity were especially helpful (Kenderdine 1994:70-89).

A series of studies led by Dr. Lawrence Babits (Babits et al. 1995; Babits and Kjorness 1995) involved surveys on the Pamlico and Pungo River systems, both geographically close and environmentally similar to the Albemarle Sound river systems. The first survey, conducted 1993, focused on the north shore of the Pamlico River from Bath Creek to Wades Point, NC (Babits et al. 1995). A year later, the western shore of the Pungo River, North Carolina, was surveyed (Babits and Kjorness 1995). Conclusions from the first survey showed that most sites were abandoned vessels and the most common were sheltered water sites consisting of either graveyards or single vessels (Babits et al. 1995:104-105). The second survey was designed to test conclusions made after the first survey and resulted in similar findings (Babits and Kjorness 1995:75-76). Due to the findings of their research, surveys of the Roanoke and Perquimans Rivers paid special attention to sheltered areas in search of new cultural resources.

Taking into consideration the findings of Kenderdine and the model created and tested by Babits' et al. for vessel deposition, a remote sensing methodology was designed for the fieldwork portion of this thesis. Focusing on the Perquimans River, a great deal of time and effort were expended on the upper portion of the river and along its banks and small streams, hypothesizing similar results to those gathered on the Murray, Pamlico, and Pungo Rivers. These areas have

better natural protection and fewer disturbances due to dredging, therefore, they were flagged as potential abandonment zones.

The previous regional studies conducted in the Pamlico and Pungo Rivers (Babits et al. 1995; Babits and Kjorness 1995), Dry Tortugas (Souza 1998) and the Patuxent River (Shomette and Eshelman, 1998) are able to give vessels historic context, but fail to use an explicit theoretical approach with which to place their vessels into the cultural landscape. This study of the ASCLD will attempt to analyze the data, relying heavily on several theoretical approaches, in order to give the vessels a greater context within the study region's cultural landscape, beyond the physical terrain.

Central Place Theory

Before considering cultural aspects of the study area, this thesis devotes much of its analysis to the location of the vessel assemblage in the physical landscape. In an effort to interpret the landscape and fully utilize the information it can provide, several landscape theories were consulted. The first, Walter Christaller's (1966) Central Place Theory, is used to determine the importance of population centers as economic indicators of the study region.

Central Place Theory states that the chief profession of a town is to be "center of its rural surroundings and mediator of local commerce with the outside world" (Christaller 1966:16). This concept is based on the idea of centrality, or "the relative importance of a place with regards to the region around it" (Christaller 1966:18). In this context, the term "importance" refers to the degree to which a town exercises central functions. The complimentary region is the area for which a Central Place is the center (Christaller 1966:21). This thesis often refers to the Albemarle Sound region, the total study area. This over-arching region is divided in two ways: land and water systems. The easiest way to make those divisions is to use pre-existing

boundaries. Therefore, the research is categorized by counties or by water systems as appropriate. In turn, these counties and water systems act as Christaller's complimentary regions and must therefore have a Central Place.

To determine the Central Place of a region, it is necessary to consider several factors in addition to economic importance. Some factors include the region's size, the landscape topography, means of transportation, soil fertility, and mineral abundance (Christaller 1966:21-43). This study uses several of these characteristics to determine the Central Places of the Albemarle Sound.

By definition, most towns have economic importance to the surrounding areas, and as such, it is important to define the characteristics that differentiate Central Places by level of centrality. Thus, Christaller gives us Central Places of a Higher Order and Central Places of a Lower Order (Christaller 1966:17). Places, which exhibit few, if any, central functions are called Auxiliary Central Places (Christaller 1966:17). Finally, he defines a Dispersed Place as those that are:

> (1) areally bound ones-those settlements the inhabitants of which live on their agricultural activities, which are conditioned by the land area surrounding them; and (2) point-bound ones- those settlements the inhabitants of which make their living from resources found at specific locations…Finally, (3) …settlements which are not bound to a central point, an area, or an absolute point (Christaller 1966:16-17).

The towns examined in the study area are classified using only the designations of Central Places of Higher or Lower Orders. Places falling under the classification of Auxiliary Central Place or dispersed places are not discussed.

Economic tendencies, population, and all other characteristics defining Central Places are susceptible to change, meaning the importance of places can change, giving way to both growth

and decline. Christaller argues that economic importance determines whether a location grows or not. Therefore, the patterns of growth and decline of the Central Places will be a direct correlation to the economic evolution this research will compare to the maritime archaeological site distribution.

This thesis will use similar methods of analysis- that of population, industry agriculture, and transportation, when examining the economic history of counties bordering Albemarle Sound and its river systems. An understanding of the greater complementary regions will be gained by defining Central Places and focusing on their economic history. This provides the foundation of economic history with which to compare any and all archaeological findings in attempts to answer the research questions forming this thesis.

Cultural Landscape

Central Places and complimentary regions can be defined in the landscape using physical and definite boundaries. Trying to set borders to define the Albemarle's maritime cultural landscape becomes increasingly difficult as aspects of this theme rely less on physical boundaries and depend more on abstract ideas.

Keith Muckelroy (1978:6-7) may have been one of the first to hint at the idea of a maritime specific cultural landscape. He explains the distinct separation between maritime archaeology and what he calls "maritime ethnology," a study of material cultural viewed "in the context of social forms, economic systems, etc" (Muckelroy 1978:6-7). Simplified, he is describing a manner in which material cultural can be studied in a broader context than the ship on which it was found and the isolated lifestyle of shipboard life. It is not until nearly fifteen years later that a definition of maritime cultural landscape is provided in the work of Christer Westerdahl.

Christer Westerdahl (1992:5) says that the maritime cultural landscape "…signifies human utilization (economy) of maritime space by boat: settlement fishing, hunting, shipping, and its attendant subcultures." The categories in which this maritime landscape can be seen are vast, but can be simplified by grouping them into five major themes, as follows:

1.) Shipwrecks- indicators of use and dating instruments
2.) Land Remains- ancient monuments preserved on the waterfront
3.) Tradition of Usage- the advantages of local maritime experience and tradition
4.) Study of Natural Topography: Natural Havens- contours on land, depth curves; effects of sitting and isostatic uplift
5.) Place Names- general considerations of applicability (Westerdahl 1992:709).

Westerdahl (1994:265) defines evidence of these themes of maritime culture as "a recurrent set of significant, maritime events."

In a regional survey such as the one being conducted here, there is the potential to have many archaeological sites over a large area. These sites should not be looked at as simply having individual importance, but rather significance in a broader context as well. The surrounding landscape is essential to establish context for any recorded shipwreck or abandonment event. This analysis of the Albemarle Sound will build upon Christer Westerdahl's work concerning the maritime cultural landscape and use it as a basis for understanding the importance of landscape study. Westerdahl's concept of Centers of Maritime Culture (Westerdahl 1994), places where a concentration of maritime activities might occur, demonstrates an inherent correlation with Central Place Theory. There is no question this implies including ports and other commercial areas such as Albemarle Sound region's Central Places. Several of the defining characteristics of both Christaller's Central Places and Westerdahl's maritime centers are the same, namely transportation and traffic.

This single study will not attempt to cover all five of Westerdahl's themes, but instead will focus on few select aspects. His first theme, shipwrecks, is used extensively in this research (Westerdahl's use of the term "shipwrecks" is a broader definition of vessel loss, including abandonments). While it is, again, impossible to completely eliminate other branches of Westerdahl's idea, shipwrecks and abandoned vessels offer significant amounts of information without spending extraordinary efforts researching their context. This study will combine the themes of shipwrecked and abandoned vessels with natural topography in order to conduct a spatial analysis using the ASCLD. After identifying patterns of wrecking events and abandonment areas, further conclusions might be made concerning the maritime cultural landscape of Albemarle Sound. The Centers of Maritime Culture (hereafter referred to as Central Places) in this study are all port towns, steeped in maritime culture due to their long-term dependence on the bodies of water. The sound and rivers, with their centuries of history, are all included in the maritime cultural landscape.

Conclusion

The foundation of this thesis comes from the ASCLD and builds upon the statistical and geo-spatial analyses conducted from it. Previous comparative and riverine studies by the likes of Kenderdine (1994, 1995), Shomette and Eshelman (1998), Souza (1998), Duncan (2000), Price (2006), Friedman (2008), and Richards (2008) provide examples of structure and research techniques and design that were utilized throughout this study. Their comparative approaches all incorporate aspects of technology and/or proximity of vessels in efforts to bring behavioral trends to light, just as the goal of this study is to understand the economic trends of the Albemarle Sound region.

After creating the ASCLD through historical research and remote sensing fieldwork, further analysis uses the landscape theories of Christaller (1996) and Westerdahl (1992) to place the data into a cultural context unique to the study area. The following chapters will outline the research methods used in data collection, the historical understanding of the cultural landscape, and the analyses defining the statistical and spatial relationships between places and vessels.

Chapter 3: Methodology

Introduction

Research for this study developed in three separate phases: historical research, archaeological research, and data analysis. Historical research focused on two major areas- individual vessels and county histories. Sources were examined to compile information on individual vessels lost within the region's waterways. Information concerning the eight counties making up the study area was also collected to form an overview of each county's establishment and economic development. Archaeological research included remote sensing to search for new cultural resources to establish better spatial provenience of historically documented watercraft. The analysis phase compiled the results of the historical and archaeological research to determine and present trends in the maritime trade patterns and to ascertain the effects of the cultural landscape on those patterns. This chapter will describe the methodology used for each phase as well as challenges that were confronted throughout the research process.

Historical Research

The historical research design was developed on the basis of two main objectives. First, data on all known lost vessels was compiled into a database. Secondly, a comprehensive understanding of Albemarle Sound region economics both past and present, as a whole and by individual counties, had to be clear to make comparisons between the historical record and any patterns the archaeological record would reveal.

The historical research process began at the UAB in Kure Beach, North Carolina. The UAB houses three main types of accessible files, organized by river system or region. The Site Files, a separate file for each shipwreck known by historical or archaeological evidence, were the

most heavily used for this research. Copies were made of the Albemarle Sound file, Perquimans River file, Pasquotank River file, Scuppernong River file, Edenton Harbor file, the Dismal Swamp file, and the Roanoke River file. These site files include a three page form of basic information on each lost vessel such as dimensions, cargo, rigging, home port, port of departure and destination, and other notes. Any historical information about the vessel is also included, such as the newspaper article of the wrecking or copies of pages from registers.

Joyner Library at East Carolina University (ECU) was used in several ways over the course of research. During initial stages, the collection of *Merchant Vessels of the United States* was used to complete many gaps for individual vessels entered into the ASCLD. The library has records for merchant steam vessels from 1908 to 1989 in hard copy as well as microfiche from 1807 to 1856. Entries for individual vessels include the official number, rigging, name of the vessel, tonnage (gross and net), dimensions in feet (length, breadth, and depth), when and where the vessel was built, its service, the horsepower of engines, name of owner, and the home port. By using deductive reasoning, years of wrecking and abandonment can be confirmed using the ships' registers. All registered vessels are listed in this record every year. Noting which year the vessel ceased to be listed gives a period of one year during which the vessel was likely wrecked or abandoned.

Joyner Library's North Carolina Collection was invaluable during the historical research. The reference section contains a plethora of books with the history of the entire state allowing for an overall examination of trends in North Carolina as well as individual county histories. Of particular importance were the compiled colonial records containing valuable primary sources. The North Carolina Collection also has an extensive collection of Port of Entry Records, including the ports of Edenton, Plymouth, and Elizabeth City. Certificates of registration and

enrolment give details concerning merchant vessels that were cleared at the port including dimensions, construction details, owners, and cargoes. All this information was crucial for filling out the ASCLD.

Four online databases were used during the historical research phase. The first two were used to discover more information concerning individual vessels already in the ASCLD. Both databases served as tools for finding primary and secondary sources on specific shipwrecks. The *Ship and Yacht Register List* can be found at the Mystic Seaport website. The virtual library has a tool allowing researchers to search both *American Lloyd's Register of American and Foreign Shipping* and the *Record of American and Foreign Shipping*, covering the years 1857 to 1900. The search can be run using either the vessel's name or the shipmaster. Results for each query display vessel type and year of the index in which it is found, allowing for efficient use of the index for researchers with prior knowledge of the vessel's type and years of service. The link to the desired vessel will take the researcher to a digital copy of the original register. *Index to Ships in Books* (McCracken 2002) is an index that allows the researcher to search for a particular vessel reference in published works. This index is incomplete, but does have a large base with which researchers can begin. It includes 67 books, 110 volumes from 3 journals, one CD-ROM collection, and one online collection. Ships are searchable by name. As of 28 May 2003 the site reported having more than 103,000 ship names in the index.

The third database provided quantitative population data. The University of Virginia (UVA) maintains a website containing United States Census data broken down to the county level for the 48 continental states from 1790 to 1960 (UVA 2007). By choosing preset queries, researchers can examine many aspects of the population such as education, housing, ethnicity, and agriculture. Utilizing this website streamlines United States Census data research.

Finally, the fourth database provided agriculture data by county. The United States Department of Agricultural (USDA) hosts a database of agricultural information gathered during official United States Census years (USDA 2008). While the database is not 100% complete, information available was enough to address many research objectives of this thesis.

The North Carolina State Archives were utilized in searching for evidence of industry and general use along the Perquimans River. When searching through historical deeds, any mention of landings, personal or commercial, were noted. Wills and inventories were also examined, and any mention of watercraft or maritime equipment was noted.

Remote Sensing

The archaeological research was conducted with a grant awarded ECU by the National Oceanographic and Atmospheric Administration (NOAA) Office of Ocean Exploration in 2006. This grant was awarded to Dr. Lawrence Babits, Dr. Nathan Richards, Frank Cantelas (Maritime Studies Program), and Dr. J.P. Walsh (Geology Department), over 2006 and 2007. The objective of the grant was to conduct a remote sensing survey of the Roanoke and Perquimans Rivers to discover cultural resources. This work was designed to compliment previous work conducted by ECU in the Albemarle-Pamlico Estuarine System (APES) Project which began in 1994 with the goal of systematically surveying the rivers and estuaries within the Albemarle and Pamlico regions.

The bulk of the remote sensing occurred in the summer of 2006 from 31 July through 18 August. This time was split equally between the two rivers, starting with the Roanoke and finishing with the Perquimans. The project was carried out by ECU staff and students. Work continued in the fall of 2006 with two weekends spent surveying on the Roanoke River. Personnel included staff of ECU's Program of Maritime Studies and students of HIST 5005

(Selected Topics) Deep Water and Advanced Survey Methods for Maritime Archaeology. The final stage of remote sensing occurred in March 2007 on the Perquimans River and in Edenton Harbor. This time personnel were at a minimum and included only a few ECU staff and the author.

The ECU research vessel *Beeliner*, was used most often during the remote sensing portions of the field work. This vessel is a May Craft with two 225 horsepower, four-stroke outboard motors. At times, this 27-foot vessel's draft was too deep to be used safely so, in the shallow waters, the research vessel *Flounder* was used instead. *Flounder* is a 24-foot Carolina Skiff with a single 115 horsepower, four-stroke motor.

All remote sensing was conducted using side scan sonar, the Marine Sonics 600kHz model and later the Klein 500kHz 531UT model. The magnetometer was a Geometrics 882 Cesium model. On occasion, the water was too shallow for the sonar which generally hung at least a foot below the surface. Several areas are without magnetometer data because of technical difficulties.

Hypack Inc.'s *Hypack Max* software was used for both navigation purposes and magnetometer data acquisition. Marine Sonics *SeaScan PC* software was used during the initial surveys for sonar acquisition. For the second phase of the Perquimans survey, Chesapeake Technologies *SonarWiz.MAP* was used instead. The reasons for the change had to do with the processing stage and will be explained in more detail later in this chapter.

Remote sensing on the Roanoke River in the summer of 2006 was a continuation of a remote sensing project begun in 2004. The earlier survey conducted remote sensing from Plymouth to Jamesville, NC. The 2006 survey, conducted remote sensing from the mouth of the Roanoke River several miles upriver to Hamilton (Figure 2). Because the river is relatively

narrow where the research was conducted, only two lane searches were carried out, traveling the north bank during the westward journey and the south bank during eastward return. Swath distance alternated between 20 m and 50 m as the location warranted (Friedman 2008:26). Along with the primary river, approximately 10 miles of tertiary river was surveyed.

The first stage of the Perquimans River survey was conducted over six days between 10 August and 18 August. Coverage began at the mouth of the river and continued upriver approximately one mile past the Highway 37 bridge at Belvidere, North Carolina (Figure 3).

The original plan consisted of coverage lanes spaced 100 m apart, with a sonar swath of 150 m. The coverage had a 50 m overlap between lanes. The lanes stretched from the mouth of the river to the Highway 17 bridge. This area was covered in the first four survey days. It was quickly determined that lanes closest to shore would have to remain un-surveyed as the water was too shallow, only two feet in some areas, to pilot the vessel. A second change to the field plan was made as efficient use of time became critical. Because of periodic dredging that occurred in the past, the channel was determined a low priority and could be left un-surveyed until a later date.

On 17 August 2006, the *Flounder* was launched at the boat ramp in Belvidere, just off Highway 37. Due to technical difficulties, the magnetometer could not be used; therefore, only sonar was used to survey the upper river. The survey was conducted to approximately one mile north of the Highway 37 bridge before low water forced the crew to turn around. From that point, sonar was taken downriver until the vessel reached the town boat ramps in Hertford, North Carolina. The original swath was programmed at 50 m. This was widened to 100 m when warranted by the river width.

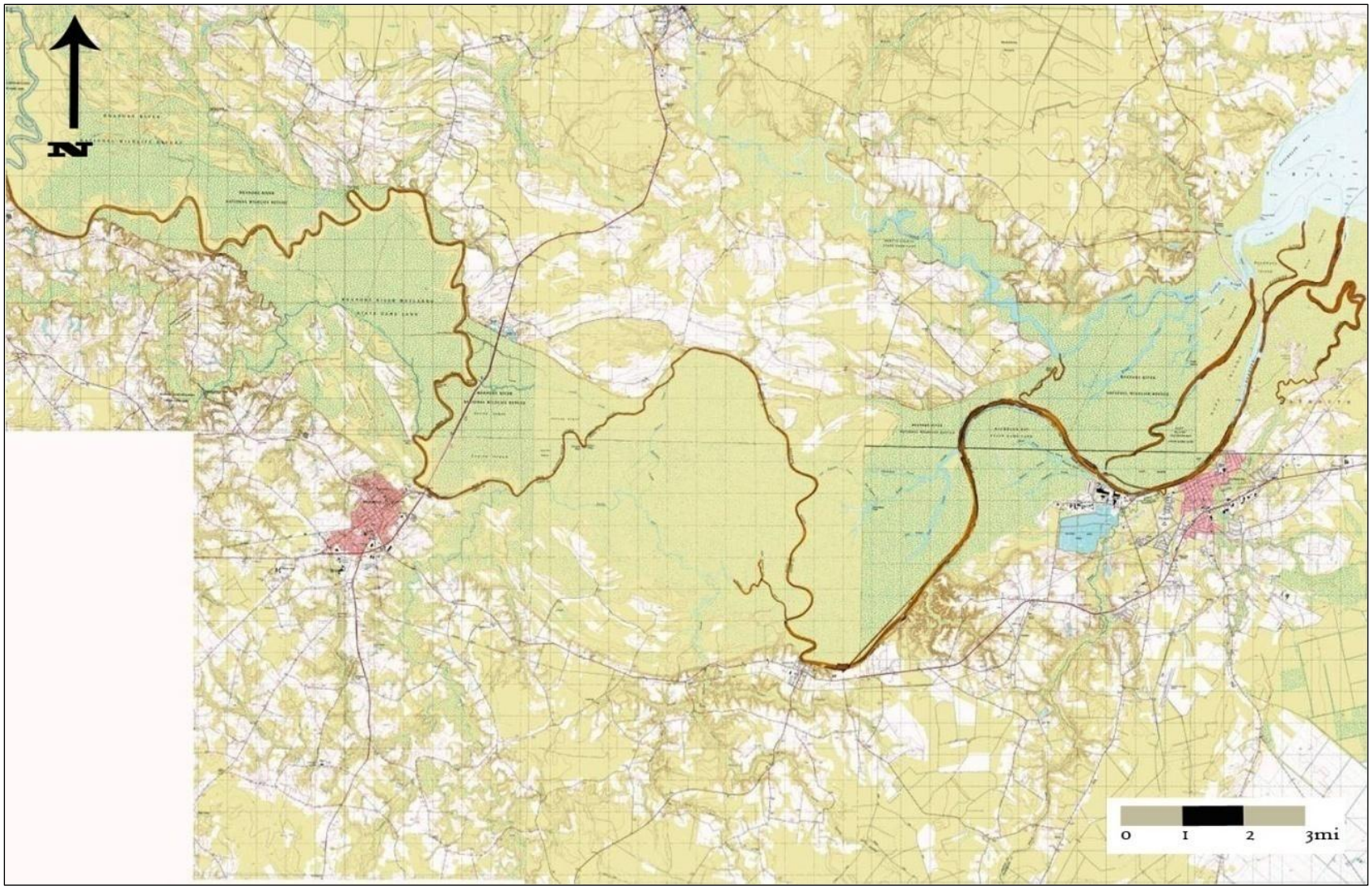

FIGURE 2. Map showing sonar coverage of the Roanoke River. (Created by Adam Friedman, 2007.)

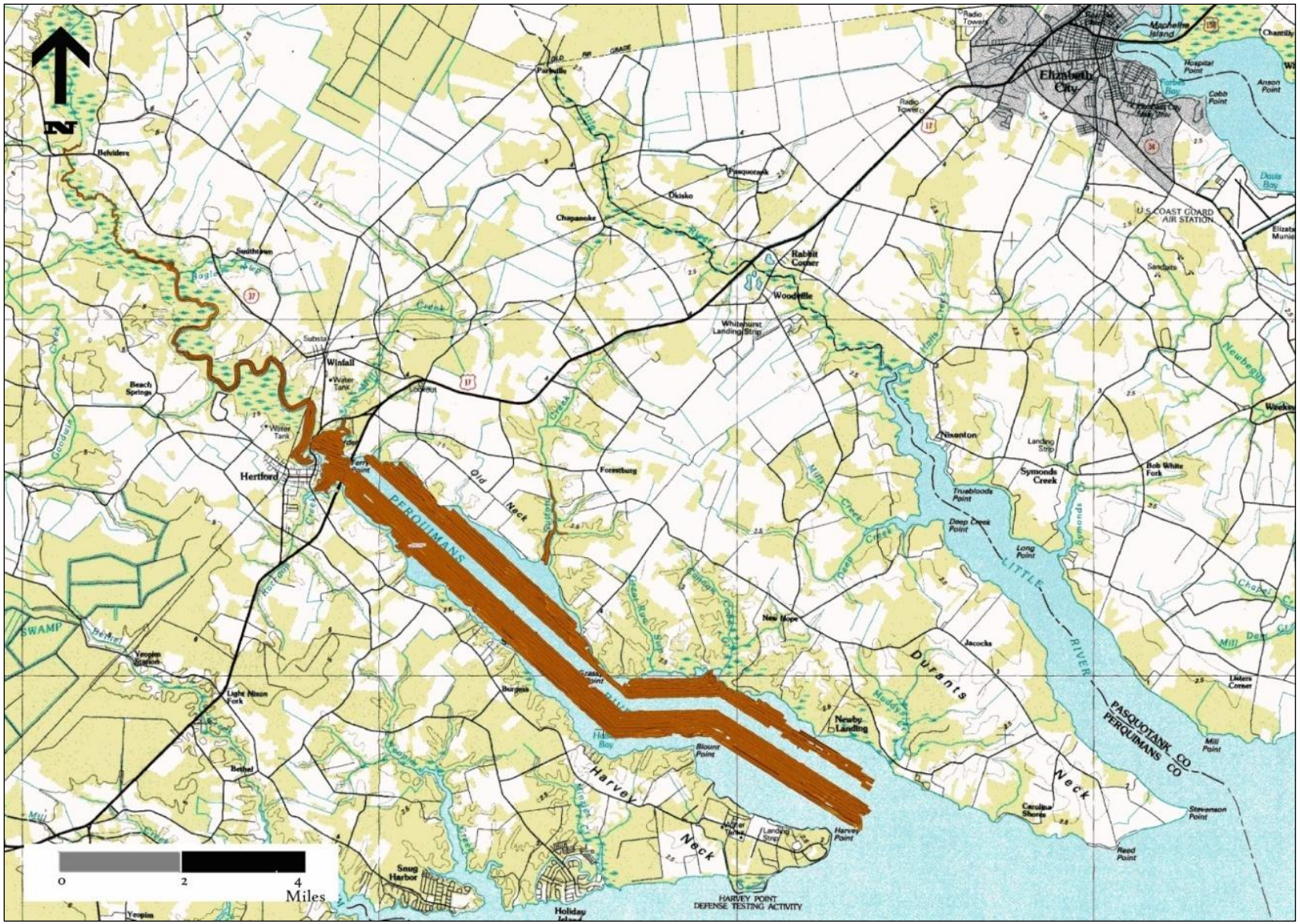

FIGURE 3. Map showing sonar coverage of the Perquimans River. (Created by author, 2007.)

The area between the Highway 17 bridge and the S-bridge of Hertford was surveyed last, on 18 August 2006, using lanes spaced 75 m apart. The lanes went in a northwest-southeast direction. A final pass along the shoreline was made using a 100 m swath. The waters along the shoreline were very shallow, making it difficult to acquire sonar images all the way to the edge of the shore. Another problem occurred because the north-south orientation of the lanes. It created very short lanes and resulted in an excessive amount of "turn data." Sonar images taken when the boat is making a wide turn tend to be very poor. In this case, "turn data" occurred along a majority of the shore line.

In March 2007, a second trip was made to the Perquimans River to obtain magnetometer readings of the upper river. While taking magnetometer readings, the sonar was also deployed. Due to engine trouble, the two instruments had to be pulled back into the boat with several miles left un-surveyed. The following day, a sonar and magnetometer survey was conducted in Sutton's Creek, a small creek flowing into the Perquimans River from its eastern shore. To finish the trip, the area between the main bridge and the S-bridge was surveyed again. This was done for two reasons, poor data from the previous attempt and because a local informant reported that one, possibly two, shipwrecks lay in that area. This time the lanes ran in an east-west pattern, keeping "turn data" to a minimum.

The Edenton Harbor survey was done in a single day, using both the sonar and the magnetometer. Swath distance was maintained at 50 m throughout the harbor. This survey yielded no new targets or anomalies.

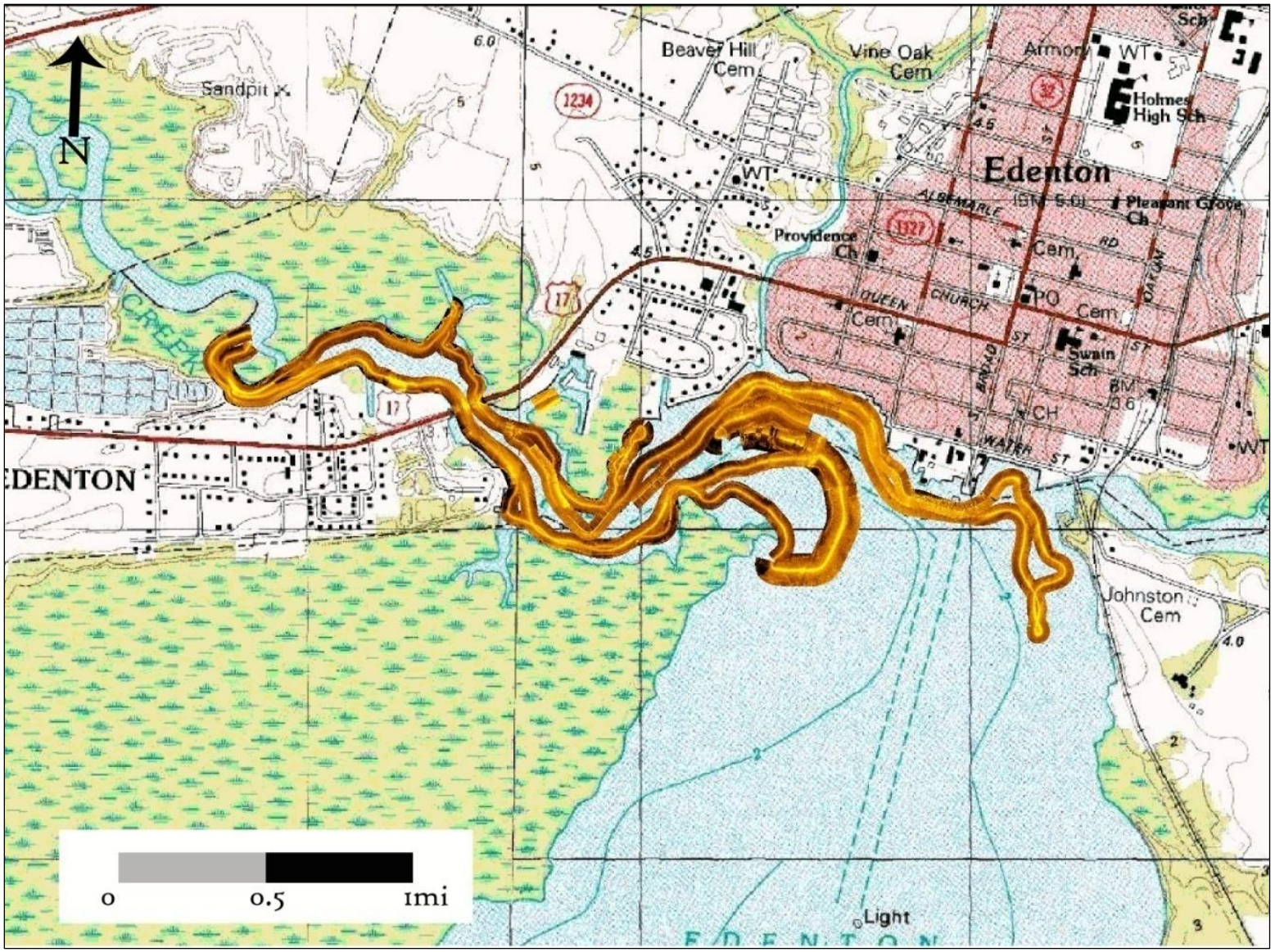

FIGURE 4. Map showing the sonar coverage for Edenton Harbor. (created by Nathan Richards, 2007.)

At the conclusion of fieldwork, the sonar and magnetometer data were processed and analyzed. Sonar data from areas that were covered more than once had to be edited so that the best data was used in the overall mosaic of the coverage area. It was then scrutinized for possible targets. The magnetometer data had to be edited to weed out any anomalies over or under a certain frequency. Once the raw sonar and magnetometer data had been cleaned up and examined thoroughly, they were incorporated into GIS using *ArcMap* to give a representation of the collected geo-spatial data.

During the original summer field work, sonar data was collected using *SeaScan PC* software. Once the data was back in the lab; it had to be edited, or examined, tile by tile. Any tiles that were particularly distorted or pixilated were deleted. This generally happened in the first few tiles of a series when the sonar fish was initiated or during "turn data," when the boat was making a turn to change lanes. After the poor quality tiles were removed, remaining tiles had to be merged to form a mosaic. The mosaic was then overlaid on a map to show the total coverage for the Perquimans and Roanoke Rivers remote sensing (Figures 2-3).

In 2007, during the second bout of field work on the Perquimans River, *SonarWiz.MAP* software was used to collect the data. This software proved much easier to work with because it was able to create the mosaic in real time, saving much post-processing. Instead, time in the lab focused on reviewing areas that had double sonar coverage. Because the mosaic was made in real time, all the data collected was included in the mosaic. That means areas covered by more than one pass had over-lapping tiles. The software allows for one of three options when editing the mosaic. Researchers can keep the tiles overlapped and simply choose the best tile to have on top, let one tile shine through the top tile, or merge all the tiles covering a given area for an average coverage. Because merging the two (or more) tiles together tends to reduce clarity of any

targets, the layering option was selected. Once the mosaic was edited, it was laid over a map using *ArcMap* to give a clear graphical representation of the coverage area. Any anomalies that were identified were marked as targets using the *SonarWiz.MAP* software.

Magnetometer data was collected using *Hypack* software and stored as .RAW files. Post-field work involved an extensive amount of editing using the "Single Beam Editor" function of *Hypack.* Magnetometer data is displayed on the computer in the form of a monopole or dipole, varying in size depending on the induced magnetism and permanent magnetization of the object causing the magnetic disturbance. Induced magnetism refers to "the combined effect of a magnetic property of the material, the earth's magnetic field, and the shape and orientation of the object in the earth's magnetic field" (Breiner 1975:3). Permanent magnetism is a property of the metallurgy and the thermal and mechanical history of the material and is related only to the object, not directly to the earth's magnetic field or to the orientation of the object (Breiner 1975:3). Anomalies that may be significant as a possible cultural find would typically fall between 50 and 100 gammas (Breiner 1975:5). Any disruption to the natural magnetic field is recorded in these .RAW files. This also includes passing watercraft, cable lines, or rubbish. Other errors, such as power spikes, leave a signature in the data as well. These readings will typically be very high on the gamma scale, often reaching thousands of gammas, and can be identified and deleted. Allowances also have to be made for natural variation that is recorded as earth's background magnetism varying across the globe. Locations along the Equator tend to have a disturbance between 20,000 and 30,000 gammas. North Carolina disturbance falls into a range of approximately 52,000 gammas.

Once the single beam editing tool is opened, several windows appear. The "Profile" window shows the gamma measurements using a simple x-y axis; the x-axis represents time, and

the y-axis represents the magnetic reading in gammas. The scale generally starts out in the thousands of gammas. When a bad reading is found it can be deleted by drawing a box over it with the click and drag method. As the enormous readings get deleted, the scale of the y-axis will adjust so it accommodates the largest remaining reading. Once the major errors were deleted, the scale was small enough to easily find the monopoles and dipoles that mark potential cultural hits. Once all .RAW files were edited, they were saved as edited (.EDT) files.

After editing, each anomaly falling between 20 and 200 gammas was noted and copied into an *Excel* file. If the anomaly was in the form of a monopole, the maximum gamma reading of the trough and crest was recorded and copied into the *Excel* file under the headings "Primary Gamma" and "Secondary Gamma." The "Average Gamma" was calculated, and then the maximum gamma found in the monopole, "Crest/Trough Gamma," is subtracted from the average. This is the "Monopole Gamma," the overall gamma size for the monopole. The UTM coordinates at the approximate beginning and end of the monopole were also recorded. A coordinate was given to the "Monopole Gamma" by taking the average easting and northing to represent the center of the monopole's coordinate.

The dipole information was organized and processed in a very similar manner. Where an estimate had to be made as to the beginning and end of the monopole, dipole calculations were based on the trough and crest. By simply taking the absolute value of the difference between the maximum points on the trough and crest, the dipole gamma was determined. The coordinates of the same maximum points acted as the primary and secondary UTM coordinates. The average of these represents the dipole coordinate.

Once all anomalies were recorded into *Excel,* the data was exported into *ArcMap*. A layer was created to show where each anomaly occurred in the coverage area. A graduated scale was

used so that the size of the anomaly was visually represented. This layer was incorporated with a similar layer made from the sonar targets to determine if there was any correlation between the magnetometer hits and sonar hits. Table 1 shows the total areas covered during remote sensing on the Roanoke and Perquimans Rivers along with the number of targets and anomalies recorded.

	Linear Miles	Square miles	Sonar Targets	Magnetometer Anomalies
Roanoke River	198	19.8	134	120
Perquimans River	232	16	4	93
Edenton Harbor	7	0.22	0	0

TABLE 1. Sonar coverage statistics.

Analysis

The ASCLD was created using many different sources mentioned in the historical research section. The original database was created by Franklin Price (2006), with the help of Nathan Richards, for use in his Roanoke River thesis research. Using *Microsoft Access*, a standardized form was created to include basic historical information such as the name of the vessel, when and where it was built, the date of sinking or abandonment, cargo, basic dimensions (length, breadth, depth, and tonnage), rig, decks, masts, where the ship was traveling to and from, its day to day function, and function when lost. The database also included any archaeological information that might exist. If the wreck was in a known location, the latitude and longitude were recorded. There was also room for extra notes and references.

With a foundation already set, the database was improved by Adam Friedman (2008) as part of his research on the Roanoke River. He was able to include new archaeological finds as well as add historical information for vessels already listed by Price. The research conducted for

this thesis expanded the database to include shipwrecks and abandonments in the Pasquotank River, Perquimans River, Edenton Harbor, Scuppernong River, the Dismal Swamp and all vessels in the Albemarle Sound west of the Pasquotank County's eastern border. Certain categories were expanded as well, including more options for the cause of shipwrecks and cargo types.

Once the gathered data was entered, queries were run within the database. These queries acted as an efficient way to find patterns amongst the shipwrecks and abandonments. The data from the queries were then exported into *Microsoft Excel* software to create graphs to serve as visual aids in interpreting the data.

Methodological Problems

The research design used for the field work was planned well in advance of this thesis ever being conceived. Therefore, the fieldwork research design does not necessarily reflect research questions posed in the thesis. Were there time and resources to add to the fieldwork, perhaps things would be planned differently. Less time would be spent on the Perquimans River where there is scarce historical material and more time would be spent on the Pasquotank River or Chowan River where historical research implies a potential for higher return of targets. The survey results of the Perquimans River survey, more specifically the lack of any targets, beg several questions. The first and foremost might be founded on suspicion of faulty equipment or operator error, however, the same crew and equipment discovered several vessels and anomalies in the Roanoke River the previous week. The large swatch size, 100 m, used in the lower portion of the river is problematic in itself. The surveyed area was too large to use a smaller swath, but at 100 m, small pieces of cultural material would not be identifiable as an anomaly.

One unavoidable limitation within the archaeological research for this thesis is the large gaps of sonar and magnetometer coverage throughout the project area. The potential for further research remains after future surveys are conducted. Currently, the database shows a major bias toward the Roanoke River where, relatively speaking, there is a high percentage of coverage.

The ASCLD is considered the archaeological record for the purpose of this thesis even though many vessels were recorded via historical documentation and not through site inspections. In order to justify using the database as the archaeological record even though it is based heavily on historical research, a special category was added to easily distinguish how a vessel's information was recorded. If a vessel is marked as a "Resource," then the vessel is, or has the potential to be, an archaeological resource. If this box remains unchecked it means that no physical vessel remains exist. To further clarify whether the vessel is a confirmed resource or simply a potential resource, another box is checked depending on whether the vessel location vessel's was confirmed via historical or archaeological means. Of the 249 vessels in the database, 33 are *no longer* cultural resources. These vessels were removed, raised, or destroyed, in some way, usually fire. Of the 216 vessels remaining, 70 have been found, leaving 149 vessels as potential resources.

Other challenges arose from the ASCLD. Friedman's work and the initial stages of this research occurred simultaneously, demanding constant communication and coordination to keep the database up to date without losing data from either researcher. An additional problem with having multiple persons using the same database is consistency. The primary example of this challenge comes from the differing interpretations of portions of the data. Friedman, when compiling Roanoke survey data, marked many vessels as abandoned based on the high probability of such cause of loss due to their location in secondary and tertiary rivers and other

out-of-the-way places (Adam D. Friedman 2010, pers. com.). It was the practice of Price and this author to mark vessels as unknown cause of loss unless there was conclusive evidence of wrecking or abandonment. This inconsistency in data recordating resulted in the need to re-evaluate several queries conducted in both the statistical and geo-spatial analyses. Thorough record keeping by all researchers allowed appropriate adjustments to be made within the ASCLD so that all data projected consistent information.

There are also limitations in the historical research. Much of the research was dependant on the United States Census records. This in itself is problematic, given complications inherent in census data gathering. People, and therefore valuable data components, are inevitably missed during the count. Questions can often times be asked in such a way that doubt is left in the mind of those answering causing confusion when responding. Finally, there is no way to verify that the answers given are completely truthful. This was all understood at the commencement of this thesis, and it was decided to accept the data at face value even knowing its weaknesses.

Another difficulty encountered when working with census data is gathering consistent data between decades. This thesis looked at records dating back to the 18th century. As the decades progressed, more complete and detailed data was offered. The more complete and detailed the primary data, the more confidence can be attributed to the interpretations of the data and the subsequent correlation with the archaeological record. Unfortunately, it was difficult to find sound data that remained consistent for more than a few decades in a row.

Finally, a challenge common to historical research occurred when searching ships registers and enrolments. Records impossible to read due to age, wear, and poor conservation were frequent. Years of missing records also added to the challenges of research.

Chapter 4: History

Introduction

This chapter outlines the history of the Albemarle Sound region by focusing on the economic development of the study region, starting with the colonial period and progressing into the 20th century. After a broad overview of the region's history, this chapter then examines the eight counties in the study area individually. With a proper understanding of the economic changes illustrated by the information and data provided in this chapter, Central Places for the study area will be determined and classified.

Habitation in North Carolina can be traced back to the Paleo-Indian period (Paschal 1984:3). The history of European-influenced North Carolina began in 1585 when Sir Walter Raleigh sponsored the first English attempt at establishing a settlement on Roanoke Island, in the northeastern area of the modern state. This first attempt failed, as did several following settlements. The first official success occurred in 1663 when eight Lords Proprietor received permission from King Charles II to establish a colony (Wood 1954:15; Butler and Watson 1984: 30-55; Ready 2005:16-48,).

New settlers, along with the Native Americans already in the area, relied heavily on Albemarle Sound and surrounding rivers for their transportation needs. The region is filled with river systems, swamps, and marshes that made overland travel extremely difficult, if not impossible. Whether for trade, pleasure, or migration, almost all early travel was accomplished by water (Clonts 1926:16-34). Vessels of all sorts have plied the waters of the Albemarle including small canoes, small and large sailing craft, and steam vessels. During the colonial era the rivers and sound saw schooners, sloops, brigs and brigantines, snows, and ships. Two-masted schooners and one-masted sloops averaging less than 50 tons were the most common. Most vessels carried some cargo, either passengers or commodities for trade (Clonts 1926:17-35;

Crittenden 1931c:1-13). By 1818 all of the major river systems had steamboat companies in operation (Sloan 1971:13-14).

The Albemarle Sound region served as an important stage for the Civil War. Union forces penetrated into the southern coastal states by early 1862. By April 1864, approximately 2,000 sailors on 30 Union ships were patrolling the Chowan, Cashie, and Roanoke Rivers (Moss 2003:29). The Union goal was to form a successful blockade of southern ports to prevent exports of cotton and tobacco from reaching the Atlantic Ocean, where they would then travel to England in exchange for war materials (Moss 2003:47). Naval engagements occurred on the sound and on both the Pasquotank and Roanoke Rivers, along with battles on land throughout the study area (Barrett 1963, 1964; Elmore 1971; Elliott 1994; Moss 2003; Ready 2005).

During the mid-19th century, railroads began to take control of the cargo transport (Hinshaw 1948:39-56; Rice 1954:69-73). By the 20th century, the maritime shipping industry that remained in North Carolina was directed to larger ports, such as Beaufort and Wilmington (Dill 1946:62). Highway systems had improved, making personal travel easier to accomplish by automobile. As the 21st century began, boat traffic in the once busy port towns of Edenton, Elizabeth City, Plymouth, Halifax, Columbia, and others was confined mostly to pleasure craft and small fishing vessels (Watson 1982:44).

County Establishment and Development

The original Albemarle Sound region of the proprietary period was organized as a single precinct, Albemarle County, in 1664. Within six years the county was deemed too large for a single local government and was divided into four precincts. In 1689, Albemarle became the Colony of Carolina, run by eight Lords Proprietor. The crown assumed control of the area in 1729 (Markham [1960s]:6). The exchange of authoritative power did little to change the general

routine of the settlers (Merrens 1964:24). One change of note was that prior to 1738 administrative land entities were designated as precincts, after which they were designated as counties. This thesis will consistently refer to areas as counties.

Pasquotank County

Pasquotank County was established in 1670 as the second most eastern county in the colony (Figure 5). Colonists were living in the county as early as 1663, when the governor of Virginia, William Berkeley, bestowed the first land grants. By 1677, Pasquotank County was the largest of the four with over 1,200 persons residing there (Markham [1960s]:5-7).

FIGURE 5. Eastern North Carolina county map, 1700 (Corbitt, 1960:283).

In 1753, nearly 100 years after official establishment of Nixonton, it was incorporated as Pasquotank County's first town (Markham [1960s]:2). It is likely that this town was created by necessity as a small town located on the western side of the county, Little Town, suffered from severe erosion when the Perquimans River rose. Nixonton was founded in a more secure, sheltered, and accessible location (Winslow 1931:2; Wood 1956:51-52). In 1793, Redding became the next major town to be established by the General Assembly. The name later changed

to Elizabethtown in 1794 when a total of four families were living there. Five years later, the county seat relocated to Elizabethtown. In 1801, the name of the town was changed to Elizabeth City. Even though it took more than a century for the county to have two official towns, there were seven ports in the county by 1700. These included Crawford's Landing, the Quaker settlement at Symond's and Newbegun Creeks, Broomfield, Windfield, Brickhouse Point, and Nixonton (Markham [1960s]:2-13).

During the colonial era, tobacco was the principle money crop for Pasquotank County-followed by corn, then potatoes. Minor crops included European wheat and timothy grass. Cattle, sheep, hogs, and horses were raised there as well (Stanley 1956:98; Markham [1960s]:11-12; USDA 2008).

Industry in the county prior to the Revolutionary War was surprisingly high compared to other surrounding counties. The first major industry was curing furs and animal hides. Before Elizabeth City was established, there was a shingle mill in operation. Other industries included woven cloth and other woolen goods, lumber, and several grist mills. Quakers in the area cobbled woolen-soled shoes and there was one silversmith in Nixonton prior to 1763. The first record of any sort of shipbuilding came in 1664 (Markham [1960s]:2-13).

The opening of the Dismal Swamp Canal, which connected Pasquotank River with Virginia, had an enormous impact on Elizabeth City, leading to extensive growth and its rise to a Central Place of Higher Order. The first recorded mention of a canal through the Dismal Swamp came from George Washington in 1763. Twenty years later, the state of Virginia took an interest in the idea and passed an act to cut a navigable canal that would connect the Chesapeake Bay and the Albemarle Sound (Figure 6). They had to wait until North Carolina passed a similar act to begin construction. North Carolinians were not so eager, as they were concerned with the

prospect of shipping North Carolina produce north to Virginia markets. Nevertheless, an act was passed in 1790 by the North Carolina General Assembly. Digging began three years later, using hired slave labor on each end working towards the center (Brown 1956:69-73, 1970a:17-33; Wood 1956:67-68).

Three years into construction, only five miles had been completed. This was largely due to the slow payment of investors' subscriptions. It did not help matters that digging began with an incomplete survey and no conclusive estimate on total cost. By November 1804, only a mile and half remained to completion. More importantly, the road that ran alongside the canal was finished, meaning that tolls could finally be collected to help cover some construction costs. The canal was completed in 1805, leaving only the locks to build and a feeder ditch to Lake Drummond to dig. Twenty years after digging began, the Dismal Swamp Canal was navigable. For the first year, only small shingle flats made their way through the canal. The first vessel to sail from North Carolina to Norfolk was a schooner carrying cotton, flour, tobacco, and hogs on April 28th, 1823 (Brown 1970a:45-54). Table 2 shows how the Dismal Swamp Canal evolved over the years, allowing for longer and wider vessels with deeper draughts

Perquimans County

Perquimans County is also one of the four original counties created after Albemarle County was divided in 1670 (Figure 5) (Winslow 2003:3). The county was briefly renamed Berkley County from 1679 to the mid-1680s (this thesis will refer to it using Perquimans). Perquimans County is able to boast having the first public structures in North Carolina. Much like the neighboring county Pasquotank, it took nearly one hundred years for the first town to be incorporated. Hertford was established in 1758 on the western banks of the Perquimans River (Watson 1987:3-27)..

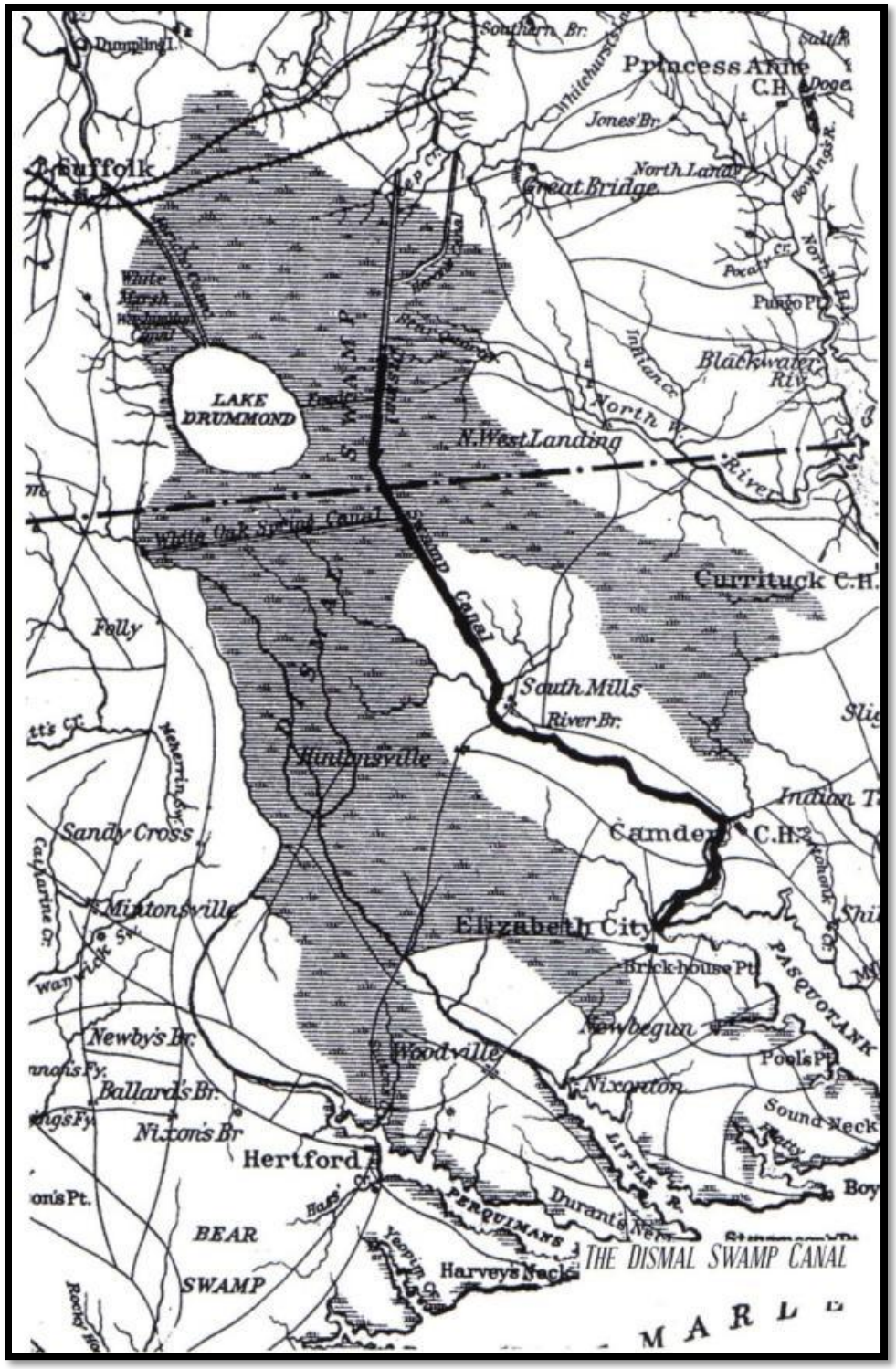

FIGURE 6. Dismal Swamp Canal (White 2002:134).

Year	Length Constraint (ft)	Draft Constraint (ft)	Width Constraint (ft)
1801		2	5
1805		2.08	6
1807	75	3	9
1812	90		15
1823	96	4.5	12.5 (Brown 1970)/18 (Trout 1998)
1829		7	15.6
1836	100	6	22
1877		7	17.5
1899	250	9	40
1941	300	12	52

TABLE 2. Dimensions of the Dismal Swamp Canal (Brown 1970a, Trout 1998).

Perquimans County has always had an agrarian economy. During the colonial period, settlers were largely concerned with basic survival and focused on subsistence farming. The only crop raised for any commercial purposes was Indian corn, or maize. By the end of the 17th century this was a very large export for the area. Grain became a commercial crop by the 18th century as well. Tobacco was raised but did not prove very successful commercially. Cotton and flax were harvested, but these were largely used for domestic purposes. The North Carolina Registrar even tried offering bounties to farmers for growing flax and indigo, but the plan did not increase production (Watson 1987:8-12).

Other forms of commercial activity included raising livestock and developing the naval stores market. Naval stores included the production of sawn lumber, staves, and shingles. Naval stores production was very prominent as early as the 17th century and the trend continued throughout the 18th century. What little manufacturing occurred during the colonial period in Perquimans County occurred in the home- the naval store production was the exception. Evidence shows that gristmill equipment started arriving in the early 18th century (Watson 1987:11-12).

After gaining independence from England, little changed in Perquimans County economically. Farming continued on a small scale and slavery continued to grow. Slavery occurred against the wishes of the Quakers residing in the county who had renounced slavery and released any slaves they had previously owned. The number of slaves in Perquimans County doubled between 1790 and 1860. Meanwhile, the overall number of farms declined, suggesting that small time farmers were being bought out or put out of business by the larger farmers who were able to increase productivity at low cost by utilizing slave labor (Watson 1987:43-44).

Corn remained the largest cash crop for the county, followed by wheat. Livestock, including cattle, horses, hogs, sheep, and oxen, contributed to the agricultural output as well. Market gardening was yet another contributor to the local economy. The fishing industry grew dramatically during the 19th century, extending out into Albemarle Sound. The boom did not last long because catch size soon started to shrink while wages continued to grow (Watson 1987:44-47).

Manufacturing, particularly milling, continued to grow in Perquimans County. By 1860, nine mills were in operation. Five mills were dedicated to flour and meal, four to sawn lumber. There were only three other manufacturing establishments, one for boots and shoes, one for carriages, and one for saddles and harnesses. Shipbuilding occurred on a small scale (Watson 1987:47-48).

Few developments occurred in the area of travel and transportation. After independence was won, few new roads were cut; the focus was on repairing and maintaining roads already in existence. Waterways were under the supervision of the county court by the mid-19th century. On occasion the court would direct obstructions to be cleared by road overseers to maintain the navigability of the streams and rivers. In the 1790s, a ferry replaced Hertford's famous float bridge (Figure 7) (Watson 1987:38-51).

FIGURE 7. Perquimans Float Bridge, c. 1895 (Perquimans County Library 2003:114).

Ships from Hertford used the Dismal Swamp Canal regularly, but it was not the only waterway the county used. Currituck Inlet and Ocracoke Inlet were also vital to shipping for the county. In 1828, Currituck Inlet closed. This had a great impact on commerce. It also affected the natural salinity of Albemarle Sound and resulted in a population decline of oysters and other shellfish (Watson 1987:53; Niedinger 2000:28).

Perquimans County was able to bounce back relatively quickly during Reconstruction due to its agrarian nature. During this time, the number of livestock in the county dropped and rice production virtually disappeared. Wheat, corn, Irish potatoes, and sweet potatoes were still grown but overall productivity declined. Oats increased along with tobacco and cotton (Watson 1987:89).

As the 19th century came to a close, corn was still the most popular crop, followed by cotton and then wheat. By the 1890s, the wheat crops began to diminish and peanut crops grew. Rice tried to make a comeback at the turn of the century but disappeared by 1920. Agriculture in Perquimans County during the 20th century followed national trends, becoming more large-scale and business oriented. By 1920, the picture changed again. Corn was still popular but wheat declined significantly. Cotton and tobacco had both risen, cotton doubling and tobacco increasing by 100%. Peanuts and soybeans both became important money crops. Perquimans County led the state in soybean production by 1961 (Watson 1987:97-100).

Fishing still supplemented agriculture and livestock was still raised. Cattle, sheep, and hogs continued to be important for Perquimans County farmers, while poultry and poultry products began to rise in importance. Even the Norfolk and Southern Railroad building a station in Hertford could not stop manufacturing from decreasing in the second half of the 20th century, and what remained was largely dedicated to lumber (Watson 1987:98-100; Perquimans County Library 2003:109). William Newby, Sr. gives an apt description of Hertford's situation

> …the Perquimans [River] which one day had a weekly service between Norfolk and Belvidere at the head of navigation. Now it is only used by a fleet of oil tankers that supply oil for home, United States Navy, and other uses. However, it could be put to work for industry and we hope someday that this will come to pass (Newby 1958:20).

This hope has yet to be realized. Hertford began as a Central Place of Lower Order and remains as such in modern times.

Chowan County

Like Pasquotank and Perquimans County, Chowan County was an original county created by the division of Albemarle County in 1670 (Figure 5) (Markham [1960s]:6). The first settlement, Edenton, was established in 1712 and served as the colonial capitol until 1746 (Rodgers and Corbin 2002:229). Much of Chowan County's economic history begins and ends with Edenton, the county's major port, often referred to as Port Roanoke. During the colonial period, Port Roanoke was one of only five official ports of entry for the colony (Belnay 1976:17). In the 1740s, an important event, the establishment of Proprietor Lord Granville's land office, brought interest and some prosperity to the small town. Lord Granville was the only proprietor of the original eight who refused to sell his land rights back to the crown when England made North Carolina a royal colony (Paramore 1967:21; Zawacki 1996:3-4).

Commodities were brought to Edenton from counties throughout the region resulting in large numbers of ships entering and leaving the port. It was, therefore, a Central Place of Higher Order. Just before the Revolutionary War, between 1771 and 1776, 827 ships cleared Edenton for American and foreign ports. Sixty-six percent of the total tonnage left Port Roanoke for the West Indies carrying provisions such as corn, salt, herring, peas, pork, beef, and livestock, plus lumber, shingles, barrels, staves, and headings. Thirty-three percent of the ships headed north along the coast carrying miscellaneous provisions, shingles, and boards. Spain and several other foreign ports were a rare destination for cargoes of staves, headings, and beeswax. Finally, 20% of the ships sailed toward the British Isles carrying similar cargoes.

On the eve of the Revolution, North Carolina was England's leading supplier of tar, pitch, and turpentine. Overall, during the years 1768-1772 Port Roanoke was responsible for 4%-7% of all the sawn lumber, 27%-41% of the shingles, and 48%-55% of the staves shipped out of North Carolina. In 1772, 65% of the corn sent abroad from North Carolina shipped from Port Roanoke (Watson 1987:11-70).

Just prior to the war, taxes and duties imposed by England disrupted some trade going in and out of Edenton. Once the war began, however, the port's importance grew because it was able to continue functioning while other major ports in the colonies were blockaded. As the end of the war neared, trade slowed to a crawl because of land attacks occurring in the vicinity of the port town. Edenton was very slow to recover once independence had been secured. In fact, many ships lay in the harbor to rot, having no cargoes to ship (Paramore 1967:30-38; Niedinger 2000:26-28). It is also suggested that its location and the difficulty in reaching the town from the open ocean, played a part in the decline. Throughout this same time, Wilmington and New Bern were experiencing significant growth (Merrens 1964:148).

As the 19th century commenced, trade started to increase again and from 1818-1837 the commercial activities ran uninterrupted. The final decline of this port began in the 1830s when the Dismal Swamp Canal opened and focus shifted to the Pasquotank River and Elizabeth City (Paramore 1967:52-59).

The Chowan River saw heavy traffic during the Civil War as both Union and Confederate forces attacked towns and camps along its banks. For example, the town of Winton was burned

and the Confederates attacked a camp of Union soldiers at Wingfield in 1862 (Barrett 1964:20, 174-175). Union ships came to the port almost weekly during the Civil War, but by the time the war ended, Edenton was "a thoroughly depressed place" (Paramore 1967:76).

Overland travel in the Albemarle Sound region was never easy but Chowan County was distinctly remote, making recovery after the Civil War especially difficult. At that time, the county's agriculture the county involved cotton, at times leaving residents with barely enough to eat. Both diets and commerce were supplemented by fishing, which remained important during Reconstruction (Paramore 1967:74-82).

Prosperity returned to Edenton when the E.C and Norfolk Railroad was extended to Edenton in 1881 (Niedinger 2000:28-30; Van Camp 2001:19). With the new transportation link, and subsequent less isolation, industry picked up. In 1888, the Branning Company was established, eventually becoming one of the largest mills in the South. In seven short years, the company employed much of the population of Edenton. The company diversified, expanding into an array of cotton gins, gristmills, shingle mills, planning mills, and sawmills. As they continued to expand, other companies began to arrive, including Wilks Veneer Company, the Brown Sash and Blinds Works, the Edenton Cotton Mills, as well as several others. Meanwhile, farmers were joining the employed ranks in the mills as well as in the lumber trade, cutting and hauling lumber and ties (Paramore 1967:83-84). Both the lumber and fishing industry began to decline by the turn of the century (Daniel 1977:2).

As the 20th century dawned, peanuts became the chief money crop. Edenton Peanut Company began operations in 1909 and Planter's Nut and Chocolate Company followed closely behind. Edenton became the industrial capital of northeastern North Carolina. Still, it was not

until 1927 that the first bridge to cross the Chowan River was built, demonstrating once again the obstacles of overland travel that residents of Chowan County faced (Paramore 1967:87-89).

Bertie County

Bertie County was formed in 1722 when Chowan County divided (Figure 8) (Hathway 1956:42; Watson 1982:5). The first attempt at starting a town, Wimberly, occurred in 1752 but the attempt failed. The next attempt was more successful when Windsor was established in 1767. It became the county seat in 1775. By 1800, it had grown into a small but thriving inland shipping center (Watson 1982:46-56). Bertie County divided several times, losing land to Tyrell County in 1729, Edgecombe County in 1732, and Northampton and Hertford Counties in 1759 (Manning 1977:5). Even with these divisions Bertie County remained one of the most populous counties in the colony (Watson 1982:5).

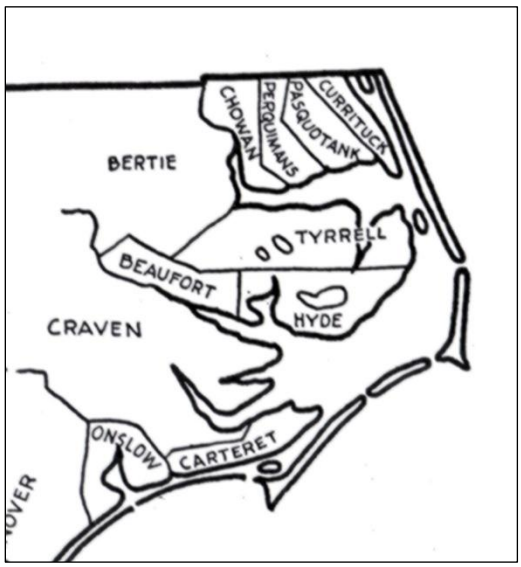

FIGURE 8. Eastern North Carolina county map, 1740 (Corbitt 1969:284).

Agriculture was always the prime factor in Bertie County's economic development. Beginning in the colonial era, corn, wheat, and to a lesser extent, tobacco, have been the principle crops. Livestock, particularly hogs, also played an important part as well (Watson 1982:52; UV 2007: USDA 2008).

It was not until the mid-19th century that Bertie's crops diversified and cotton became significant (Figure 9). This trend lasted approximately 40 years before cotton production began to dwindle. Shortly after this, in the early years of the 20th century, the agricultural scene began changing dramatically. The number of farms started falling and the overall size of farms started growing. As farming became more mechanized, labor was replaced by machinery. In 1962, 54.3% of the county's workforce was employed in some form of agricultural labor. Within a decade, 1,630 agricultural jobs, 25% of the workforce, were lost. Crops changed too. By the 1970s, the leading cash crop became peanuts, accounting for 33% total value in 1973. Tobacco and corn followed closely behind while soybeans became a significant crop as well (Watson 1982:52-55; USDA 2007).

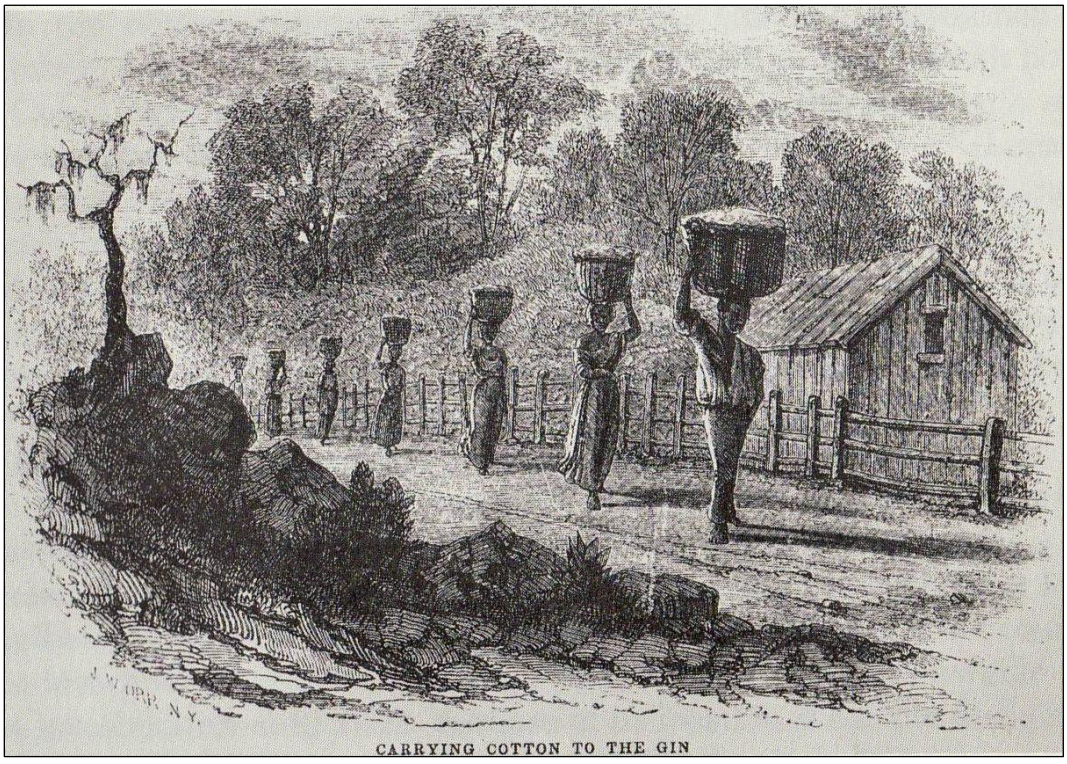

FIGURE 9. Slaves carrying cotton, a drawing in *Harper's New Monthly Magazine*, March, 1854 (Watson 1982:52).

Along with agriculture, Bertie County produced naval stores, lumber, and fish (Figures 10 and 11). In fact, Bertie County industry has always relied on extractive type industries the manufacturing, depending on its rich natural resources. This trend continues today (Watson 1982:57).

FIGURE 10. Bertie County fishermen, c. 1884 (Watson 1982:60-61).

FIGURE 11. Bertie County fishermen, c. 1930 (Watson 1982:60-61).

As with all Albemarle Sound region counties, transportation by water was a necessity in the developing years. By the 1930s, railroads, having arrived 40 years earlier, and trucks had taken over most shipping. Within twenty years, almost all water traffic was either pleasure craft or fishing boats. The rare barges that came through usually carried pulpwood or oil (Watson 1982:44).

Tyrell County

Settlers began migrating to the south shore of Albemarle Sound as early as 1690, following positive reports of the Scuppernong River and surrounding areas given by Edenton's Captain Thomas Miller and Colonel Joshua Tarkington. Only two decades later, plantations began expanding along the Scuppernong River. After being part of Pasquotank County for almost fifty years, Tyrell County was formed in 1729 (Figure 8) (Hathaway 1956:42; Davis 1963: 7-18).

The largest settlement was an area called Lee's Mill, now Roper. People began settling there by 1700 and it was named the first county seat of Tyrrell County (Davis 1963:21). There is evidence that a shipyard existed as early as 1738 (Cummings 1969). In 1739, the County Court approved construction of two warehouses, one at the mouth of the river and one further upstream at present day Spruill's Bridge. These warehouses were two of twelve tax collection and export inspection stations in the Albemarle (Angley 1986:3). They remained active until the American Revolution.

At the time of its creation, Tyrrell County was one of the largest at 150 miles in width. It was dramatically reduced in 1774 when the General Assembly created Martin County out of the western-most portion. With this change, the county seat was moved to a more centralized

location in Backlanding (Davis 1963:18-35). Further divisions occurred in 1799 and 1870 with the creation of Washington and Dare counties (Davis 1963:43-60).

In 1788, the General Assembly passed a charter to formally establish the first town, Newport, which failed to materialize. In 1793, Elizabeth Town became the first incorporated town. The name was changed to Columbia in 1810 (Davis 1963:42-43; Haire et al. 1996:15). Far from a booming port, Columbia was barely more than a trading post at the time of its establishment. Slow but steady growth for the little town was dependant on its access to the river. By 1840 there were three carpenters, two tavern keepers, one overseer, one peddler, five merchants, three lawyers, two physicians, a shoemaker, three boatmen, two blacksmiths, and several laborers listed in the census (UV 2008). By 1880, Columbia was still a small town, a Central Place of Lower Order. It was not until after the turn of the century that true progress began to occur. In 1908, the Norfolk and Southern Railroad extended tracks to Columbia. It left the station there twice a day, carrying lumber, cotton, livestock, and other freight, as well as passengers. By 1910, the Branning Manufacturing Company and the Scuppernong Milling Company produced and shipped nearly 10 million feet of lumber. Half was shipped by railroad. Barges and schooners provided other transport (Angley 1986:11). Finally in 1926, the town saw paved roads and a year later; a bridge spanned the Scuppernong River, opening further opportunities for travel (Davis 1963:48-67).

By the 1940s, potato was king, making Tyrrell County North Carolina's number one producer. Livestock had the second highest value and corn came in third. By the end of World War II, potato production began to wane and corn took over the number one spot. Cotton was barely grown in the county at this time. Small farms began to disappear by the 1950s, as farming became more business oriented and less about self-sufficiency. The lumber business grew after

World War II and by 1949 there were ten mills in the county. Fishing, as always, remained a big business though it was really more of an "off-season" job for local farmers (Davis 1963:77-83).

Halifax County

Settlers lived in what is currently Halifax County as early as 1732, but the county was not established until 1757 when Edgecombe County was divided (Figure 12). The first Halifax settlement was incorporated in 1725 when Enfield, known earlier as Huckleberry Swamp, was part of Edgecombe County and it became the county seat of Edgecombe County in 1745. The town of Halifax, established in 1757, became the first county seat for the newly formed county (Allen 1993:7-15). Halifax was a town of great importance in early North Carolina history, particularly in the political arena. Just prior to the Revolutionary War, state conventions were held in Halifax. This led to the town of Halifax being given the distinction of state capital once independence had been won (Allen 1993:53).

During the colonial years, the chief agricultural products were maize, cotton, and tobacco though cotton was only being grown in limited quantities. Other items of importance were naval stores, lumber, staves, pork, beef, rice, indigo, hides, deerskins, furs, beeswax, and honey. Tobacco, staves, and lumber were major exports as early as 1746 (Sykes 1964:16-17; Allen 1993:13). Until 1758, tobacco was shipped to Virginia and sold to buyers there. Surpluses of corn and wheat were taken to Edenton for export, but it is unlikely that these were large amounts. Herds of cattle were taken overland to Virginia (Sykes 1964:16-18)

.

FIGURE 12. North Carolina county map, 1760 (Corbitt 1969:285).

The agricultural scene did not change much after the war. Corn, wheat, and tobacco were still the main staples. Cattle, hogs, and sheep were raised and driven overland to markets at Petersburg, Richmond, or Norfolk. The town of Halifax acted as a distribution point for surrounding areas on the Roanoke River (Allen 1993:82).

In 1812, legislation was passed allowing for improvements to the Roanoke River. The Roanoke Navigation Company was formed to build a canal that would make the Roanoke River navigable from Halifax to the Virginia state border. The primary goal of the company was to build a canal nine miles upriver from Weldon to help water traffic avoid rough waters. Eleven years later, construction of the canal and other improvements were complete (Figure 13) (Braswell 1987:4-36).

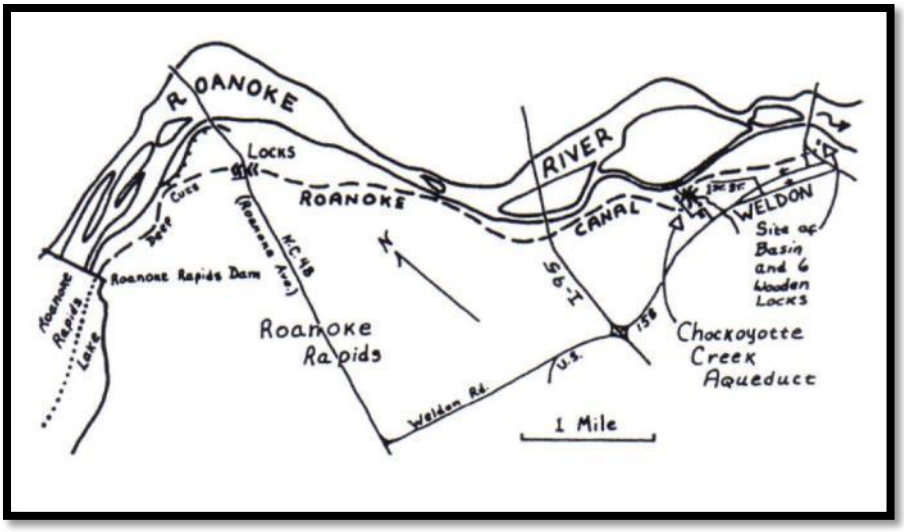

FIGURE 13. Roanoke Canal Corridor (White 2002:129).

At approximately the same time the canal was nearing completion, the railroad arrived in Halifax County, making water transportation nearly obsolete. In 1832, a line ran from Petersburg, Virginia, to Blakely Landing in Halifax County. The Wilmington-Weldon railroad line arrived from the south in 1840. Fifteen years later, the Raleigh and Gaston Railroad line reached Weldon (Allen 1993:2-15; 80-89). Due to a dwindling maritime importance, Halifax is considered a Central Place of Lower Order in this study.

Martin County

In 1774, both Tyrrell and Halifax Counties lost land for the formation of Martin County (Figure 14) (Manning 1977:3). The earliest deed for Martin County land is dated 15 August 1722. In 1779 Williamston was the first Martin County town incorporated, though it had been a settled village by 1730. Williamston was named the county seat and became an official port of entry in 1777. Two other important towns in the county include Jamesville, established in 1785, and Hamilton, established in 1804 (Manning 1977:35-60; 165). All three towns were ports on the Roanoke River. All three ports existed simultaneously on the river and showed similar importance and therefore they are all Central Places. Of the three towns, Williamston has a

higher position of importance due to its distinction as county seat and is therefore designated the Central Place in Martin County for the purposes of this study. It is categorized as a Central Place of Lower Order.

FIGURE 14. North Carolina county map, 1775 (Corbitt 1969:286).

The first settlers came to Martin County because of the abundance of fish and game, not for the agricultural opportunities. They engaged in subsistence farming, growing crops such as corn and tobacco, but nothing was grown for commercial purposes. It was not until the mid-19th century that agriculture began to have a commercial impact (Manning 1977b:91-95).

Corn crops have always taken up the greatest acreage in Martin County, despite the fact that cotton, tobacco, and peanuts acted as the principle cash crops. Corn was generally used for the settlers themselves and the livestock. As machinery began to replace work animals, more of the crop could be found on the market (Manning 1977b:94, 133; UV 2007: USDA 2008).

Cotton was a mainstay for Martin County for 150 years. It was most likely grown even before the lands were designated as Martin County, but came into its own after invention of the cotton gin in 1793. Most of the early gins were privately owned on the plantations, encouraging

expansion of these lands. The first public gin arrived in 1845. The number of gins and total production continued to grow after the Civil War until 1914 when the prices bottomed out. There was a slight comeback after World War I, but by 1920 cotton was no longer a major crop for local farmers. This was due to the price collapse in 1920 and a boll weevil infestation (Manning 1977b:108-109).

Native Americans grew tobacco in the area before Europeans appeared. As the new settlers arrived, they started to grow the crop for personal use and to barter with. Until the Revolutionary War, tobacco grown for commercial purposes was shipped to England. After independence, tobacco production practically ceased. It was not until after the Civil War that the crop started to come back, appearing again in the 1880 census. Part of the reason for this lapse in production is the difficulty and expense associated with growing tobacco. Local tobacco markets started opening at the beginning of the 20th century, the first in Roberson on 7 August 1900 and one in Williamston in 1902. Even so, the first completely automatic tobacco harvesting machine to be owned in Martin County did not arrive until 1972 (Manning 1977b:111-114).

John D. Simpson grew the first peanuts in Martin County in 1865. It was not long before peanuts were a major crop. The first year that Martin County farmers grew peanuts on a large scale was 1884. The change from cotton to peanuts was due to falling cotton prices, which dropped so low that most farmers were unable to make a profit. A mechanical picker was invented in 1908, and it was then that peanuts truly became important. By 1912, peanuts were second in value only to tobacco. The crop was usually hauled to Williamston for shipment by boat or railroad cars to firms in Suffolk, Smithfield, Wakefield, and Norfolk where the mills were located. In 1907 the first peanut cleaning and shelling plant was built in the county. There was a dip in profits during the Great Depression when the price of peanuts dropped dramatically,

but by 1933 the Federal Government stepped in and helped to stabilize the market. The maximum acreage for peanuts was planted in 1945. This may be due to the fact that in 1944 there was a major influx in workers when farmers were allowed to employ German prisoners of war (Figure 15) (Manning 1977b:98-107; UV 2007; USDA 2008).

After the fall of cotton due to the boll weevil-infestation in the first half of the 20th century, the soybean became a principle money crop. It had already been a mainstay in Martin County agriculture for a century. Another important crop through 1905 was the Irish potato. This crop had a minor comeback in the 1920s but then slowly faded from the picture. Throughout the 20th century a variety of crops have had at least a small impact. These included sweet potatoes, honey, grapes, and pecans. Livestock also played an important part, particularly swine, cattle, poultry and eggs. In addition, forestry products have been a major source of income (Manning 1977b:136-140; UV 2007; USDA 2008).

FIGURE 15. A view of the Prisoner of War camp in Williamston, c. 1944 (Harrison 1999:39).

Washington County

Settlers have been living in current Washington County since the 1680s. The county was officially established in 1799 when land was taken from Tyrell County (Figure 16). Plymouth, the first incorporated town in the county, had settlers living there by 1787. In 1790, 17 years before it was incorporated, the United States Congress declared the town a Port of Delivery. In 1823, it was named the county seat (Davis 1963:43; Washington County Historical Society 1970:1-5).

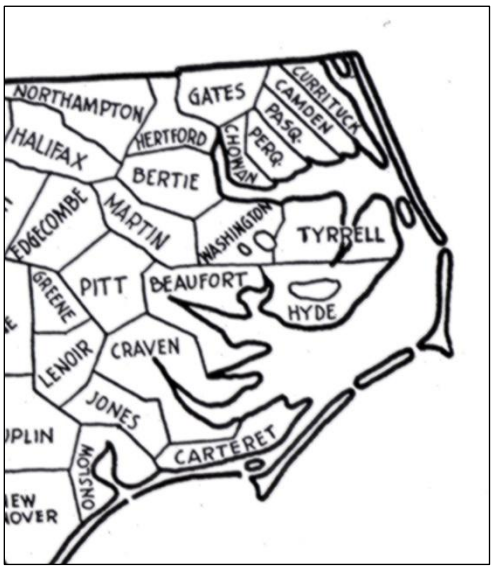

FIGURE 16. North Carolina county map, 1800 (Corbitt 1969:289).

Prior to the Revolutionary War, export trade was thriving in Plymouth. Tar, turpentine, lumber, shingles, cooperage material, cotton, and tobacco were brought in from surrounding plantations and shipped south to the West Indies or north to cities like Norfolk, Baltimore, New York, and Boston (Moss 2003:19). During the 19th century, Plymouth was one of North Carolina's top six ports, making it a Central Place of Higher Order, as it shipped more tonnage than any other town in Eastern Carolina, sometimes having up to 200 vessels on the river. (Washington County Historical Society 1970:2, 3-5; Jones & Phelps 1998:362; Moss 2003:19).

Shingles were a major export for the first half of the 19th century. The second half saw the end of shingle production but many other forest manufactured products continued to be important (Jones & Phelps 1998:362). Ships also carried cargoes of cooperage material, masts and spars, corn, rice, and tobacco during the 19th century, as they had in the 18th century (Washington County Historical Society 1970:3).

Plymouth was vital enough for the Union troops to blockade the town during the Civil War. The first battle for Plymouth occurred on 10 December 1862 when Federal troops burned most of the town (Elmore 1971;53-54; Moss 2002:37). The second, often known as "The Battle of Plymouth," occurred 17-20 April 1864 when the Federal forces were evicted (Figure 17). Union troops took control of the town again at dawn November 1864 (Barrett 1963:231).

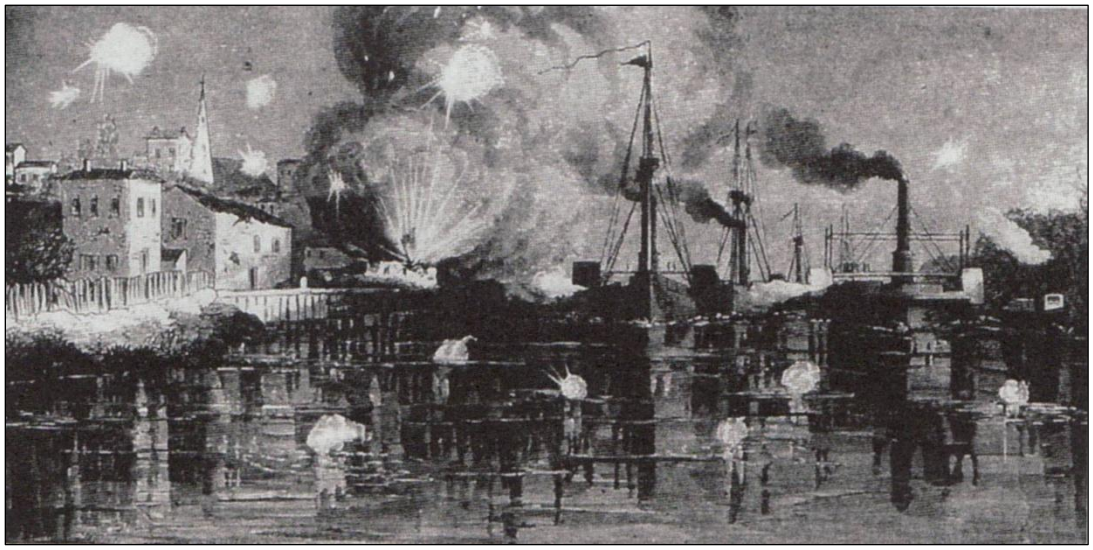

FIGURE 17. Battle of Plymouth, 17-20 April 1864 (Jones 1989:333).

County Census Data

The development of the counties' Central Places and has been outlined in the previous sections of this chapter. This last section returns to the broader view of the study region as it looks to combine the various historical data. Taken from the historical United States Census

records, the data displayed below give a clearer picture of the agricultural and manufacturing trends occurring in the Albemarle Sound region.

Historic Census records are often inconsistent- data recorded for one decade is often non-existent in other years. The most disappointing in this case is the lack of consistency in employment data. This thesis by no means suggested that *all* employed workers were involved in farming or manufacturing only. Information on other professions such as fishing, trade and commerce, and educated professions is simply not available for most years.

Figure 18 shows the population of each county in the study area. From 1790 to 1860, growth appears slow but steady in all counties, though each seems to show a decade or two of decline. Tyrrell County is the steadiest, showing minimal change decade to decade. From 1870 to 1960 greater leaps in growth, particularly in Halifax County occurred. Perquimans County is the only county which shows any kind of steady decline.

Just as the population was relatively similar in the 1850s and 1860s, the number of farms in each county was very close as well (Figure 19). By start of the 20th century, Halifax, Bertie, and Martin Counties show a higher rate of growth compared to the rest of the study area. There is no data available in 1940, but from 1930 to 1950 all counties except Martin show a decline in the number of farms. Counteracting this decline is the growth in average size of farms. Table 3 shows the average size of farms for each county in acres. As the number of farms decline, the average size increases.

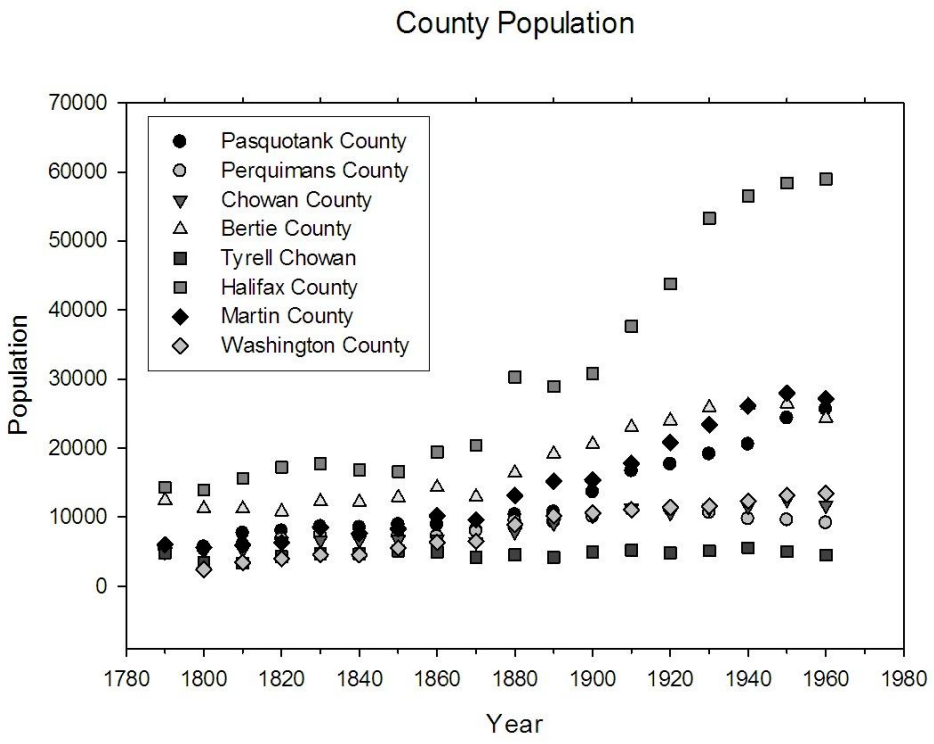

FIGURE 18. Population by county. (Graph by author, 2010.)

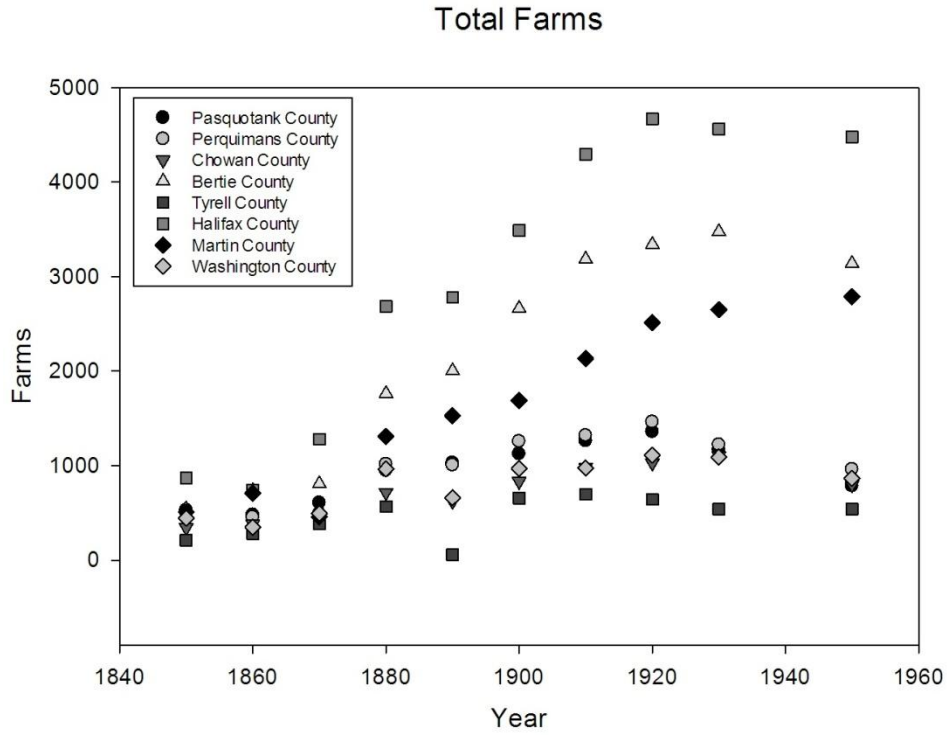

FIGURE 19. Total farms per county. (Graph by author, 2010.)

Though there are some gaps in the farm size data, it is important to note the shift from small farms at the end of the 19th century to larger farms in the early to mid-20th century. This trend became possible because farming was increasingly mechanized. Throughout the 19th century, the growing iron and steel industry produced time saving agricultural tools and machinery. This revolutionary equipment allowed for quicker planting and harvesting techniques (Mazoyer and Roudart 2006:356). During this same period, population increased, meaning a larger work force was available to large land holders when machines were not the solution.

	1880	**1890**	**1900**	**1930**	**1940**	**1950**
Pasquotank County	104	100	72	709	960	1022
Perquimans County	117	108	77	745	850	1043
Chowan County	119	130	87	641	700	976
Bertie County	163	152	128	701	790	872
Tyrrell County	141	127	95	701	670	745
Halifax County	132	128	109	681	930	835
Martin County	185	126	119	642	770	758
Washington County	113	130	88	619	640	836

TABLE 3. Average Size of Farms in Acres (UV 2008)

Mazoyer and Roudart (2006:375-378) described the mechanization of farming during the beginning of the 20th century as the second Agricultural Revolution. One result of this second revolution is that only farms already sufficiently equipped and large and productive enough to obtain income per worker *greater* than the market price of unskilled labor managed to survive because they were able to invest that income and advance in proportion of how high that income was above the unskilled market price income threshold. Farms that did not reach that threshold could not advance, therefore regressing, which led to takeover by the large, developing farms. This result is demonstrated in the study region in Figure 18 and Table 3.

Farming statistics displayed in Figure 20 show the value of all farm products for a span of five decades. There was a decline in total value from 1870 to 1890 and a slight recovery in 1900.

The 1910 Census shows a 600% increase in Halifax County alone. This correlates with the larger farm size and a spike in population. Another possible explanation for this increase is the introduction of additional railroads into the area, allowing for quicker, possibly cheaper transport of goods.

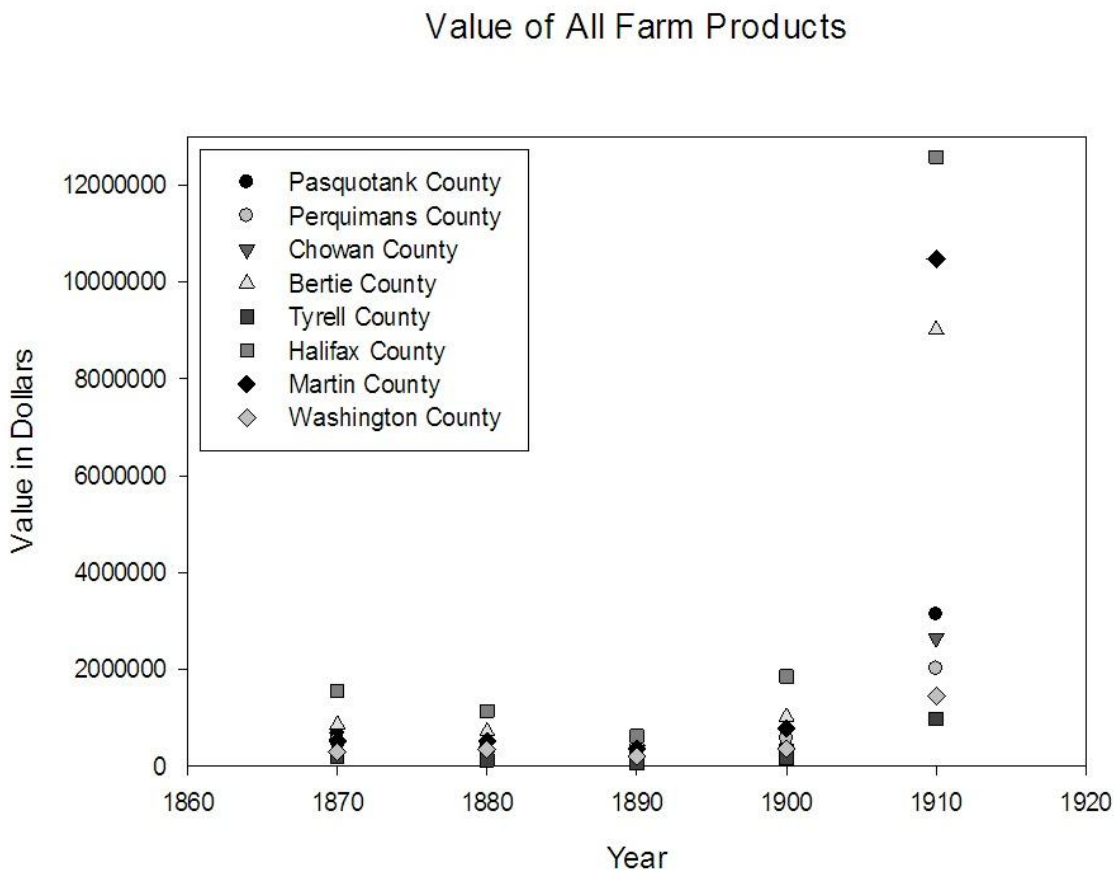

FIGURE 20. The value of all farm products per county. (Graph by author, 2010.)

Figure 21 was created to show the contrast between the agrarian nature of the study area and its industrial history. Manufacturing totalss, like farm numbers, remained somewhat steady during the later decades of the 19th century. Establishments in Halifax doubled from 1890 to 1900 and again by 1920. They made a drastic drop back to similar numbers with other counties by 1930. It seems questionable that one county could have over 160 businesses and drop to 40

within 10 years. Some of this could be due to the inconsistency of the Census, though almost all counties do decline somewhat in that same period. Totals continue to drop in 1940; at the same time farms increased in size.

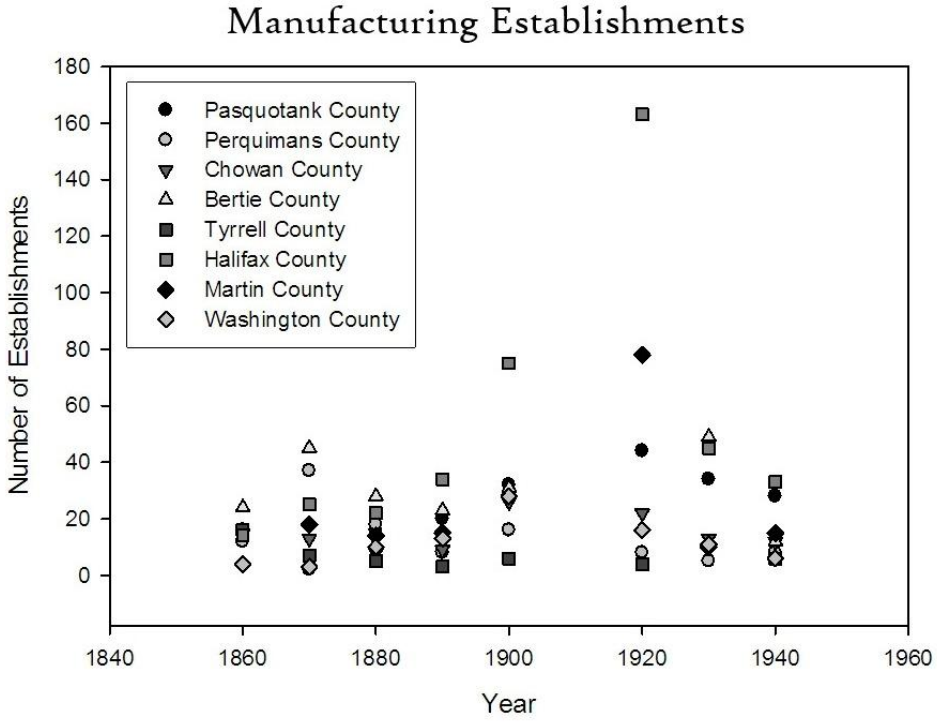

FIGURE 21. Manufacturing establishments per county. (Graph by author, 2010.)

Conclusion

This chapter explored the development and economic tendencies of the western Albemarle Sound region. Two major themes stood out- the region has been agrarian since the colonial period and remained so throughout the twentieth century and, secondly; this region was dependent on its waterways for transportation until well into the twentieth century.

Each of the eight counties has a single Central Place determined for the purpose of this study (Table 4). Three Central Places- Edenton, Elizabeth City, and Plymouth are considered Central Places of Higher Order. They achieved this distinction due to their importance as ports,

not just to their county, but also to the larger study area as a whole. The three ports acted as Official Ports of Entry for the state of North Carolina; they were important strategic points during the Civil War. Both Plymouth and Elizabeth City were ports on major water systems allowing passage to Virginia without having to travel on the Atlantic Ocean. The five Central Places of Lower Order were all important to their respective hinterlands, or complementary regions, but did not have much impact outside of that region.

County	Central Place	Central Place of Higher Order	Central Place of Lower Order	Auxiliary
Pasquotank	Elizabeth City	1800-present	1793-1799	1670-1793
Perquimans	Hertford	None	1758-present	1670-1793
Chowan	Edenton	1712-1776, 1818- present	1776-1818	1670-1712
Bertie	Windsor	None	1767-present	1722-1767
Tyrrell	Columbia	None	1763-present	1729-1793
Halifax	Halifax	None	1757-present	None
Martin	Williamston	None	1779-present	1774-1779
Washington	Plymouth	1790-1900	1900-present	1787-1790

TABLE 4. Central Places of the Study Region.

All the counties examined showed a strong dependence on farming. Corn was a continuous mainstay crop for the region. Cotton and tobacco were each important crops for short periods. Peanuts and soybeans became important in the 20th century. Naval stores and lumber were very important industries during the colonial and antebellum periods.

Farms in the study region showed an increase in number and size until the mid-20th century when numbers start to decline. This pattern follows a global trend in which small farms are taken over by larger farms with a more mechanized mode of production.

Manufacturing played only a minimal role in the Albemarle Sound region's economy. During later years of the study period, several companies developed, creating some growth but appear to have had little to no impact on the overall economic picture.

The second half of the 20th century showed a major decline in maritime shipping occurring in the Albemarle Sound. Railroads and highway systems took over most shipping, leaving rivers with little more than pleasure craft and small fishing vessels. Ferries became non-existent as bridges spanned the rivers.

This chapter has given the historic account of the economic evolution that occurred in the Albemarle Sound region. The following two chapters will investigate the archaeological record in an attempt to draw out evidence of the economic evolution by further examining maritime cultural material.

Chapter 5:
Patterns of Loss: A Statistical Analysis

Introduction

The previous chapter describes the early development and agrarian nature of the eight counties making up the study area. This chapter begins the comparative analysis of the ASCLD. The archaeological data is placed into its historical and economical context using quantitative methods such as statistical analysis.

The statistical approach divides the assemblage into three distinct themes, following the structure laid out by Price (2006) in his analysis of the Roanoke River assemblage. These three themes consist of manner of loss, technology, and trade. Using these themes provides insight into the economic environment in the Albemarle during the vessels use-life. Manner of loss breaks down the causes of loss by type, time, and place of the loss event. Technology examines the dimensions of vessel construction and lifespan of the watercraft. Finally, trade discusses the vessel's function at the time of loss, homeport, where the vessel was built, and cargo transported.

As discussed in Chapter One, no single vessel in the assemblage has a complete set of data. Vessels recorded from historical resources often lack structural information such as dimensions, build material, or precise wrecking locations. Vessels discovered during archaeological survey are often lack cargo, port of origin, or year of loss data. When completing the database form for each vessel, any data-gaps are filled in as "unknown" or the number zero where applicable. Unless otherwise specified, vessels with "unknown" or "zero" are excluded from the statistical calculation or graph.

The statistical analyses conducted in this chapter will illustrate patterns of loss as they pertain to the study area as a whole and the individual Central Places specifically. Placing the

ASCLD into both the natural and cultural landscape context will provide insight into the importance of each place. Conclusions drawn from the archaeological evidence will then be compared to the accepted historical image of the Albemarle Sound.

Manner of Loss

Vessels plying the waters of the Albemarle Sound region have served many purposes through the centuries; transportation, commerce, recreation, and defense are a few examples. Just as the vessel purpose is highly variable, so is the cause of loss. This section examines the how, when, and the where of vessel loss in the ASCLD. Starting with cause of loss, the assemblage is divided into the three themes; deliberately abandoned, shipwrecked, and unknown. These themes are subdivided based on different procedure of abandonment and cause of wrecking. An analysis of vessel loss type will illustrate patterns of human behavior regarding vessel discard. As Richards (2008:178) explains, "Researchers can use discarded watercraft as a mirror of the events and processes that brought about their disposal, and they are an extremely rich database that sheds light on the effect of technological and economic change on economic and social circumstances." The next analysis will examine vessel loss chronologically, by individual year and decade, which give sites an historic context. Finally, an analysis of where the vessels wrecked, or were abandoned, will make it possible for loss trends to be analyzed, providing information regarding economic, technological, and social changes within the area.

As shown in Figure 22, one-third of the vessels whose cause of loss is known were deliberately abandoned. As discussed in Chapter Two, the significance of the difference between the loss of a vessel by shipwreck and the loss of a vessel due to abandonment practices is an important one. Abandoned vessels are discarded with intent. Shipwrecks occur when control of the fate of the vessel is taken away from those on board (Richards 2008:6-10).

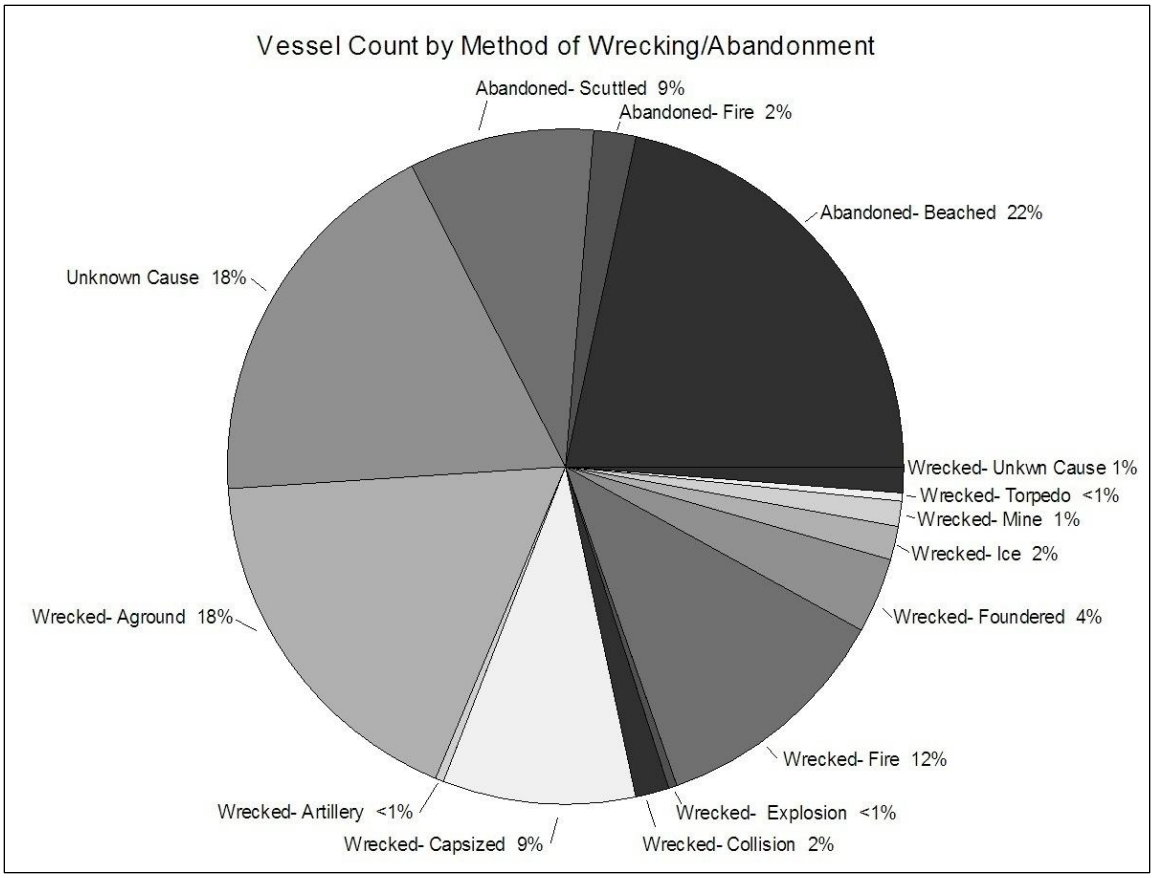

FIGURE 22. Vessel count by cause of loss, n=249. (Graph by author, 2010.)

The ASCLD classifies abandonments in three categories- beached, fire, and scuttled. The first, beaching a vessel, often means that the vessel was no longer needed. It had surpassed its use-life, likely through damage or lack of need. The other two categories, setting fire to or scuttling a vessel, are somewhat related and, according to Price's research (2006:81-83), are often utilized during times of war. Fifty-five percent of the scuttled vessels occurred during war-time. Eighty percent of the vessels abandoned by fire occurred during wartime. Abandonment of vessels using one of these two methods typically involves some sort of stratagem, such as trying to keep a vessel from falling into enemy hands or perhaps trying to block a body of water from enemy penetration. Only 7% of the vessels were beached during wartime. A total of 20 vessels were abandoned during war. Historical accounts claim that vessels were scuttled at the mouth of

Sawyer's Creek, a creek just north of Elizabeth City, to create an obstruction during the Civil War (Archaeological Site Form, Sawyer's Creek Wreck 2004). Accounts of a naval skirmish off Cobb's Point in the Pasquotank River report that several Confederate vessels were scuttled (Ready 2005:224). Of those 20 abandoned war vessels in the ASCLD, 60% were scuttled, 20% were set on fire, and 20% were beached. These trends show that during peace time vessels tended to be abandoned via beaching, but during war time scuttling and fire were preferred methods of abandoning vessels.

There are 11 separate categories involving the active wrecking of a vessel. These categories are representative of natural forces, human error, and warfare. The most common type of wrecking (36%) involved running aground. Fire was the second most frequent type (24%). The third highest recurring wrecking type (19%) involved capsizing. The remaining wrecking types leave a less significant impression, all falling well under 10%. These types include foundering (7%), ice (2%), a mine and unknown cause (both at 2%), with artillery, explosion, and torpedo accounting for 1% each.

The manner of loss in the ASCLD differs from wrecks found during Shomette's study of the Patuxent River, in which abandonment made up the largest cause of loss (Shomette and Eshelman 1998:332-333). During Price's study of the Roanoke River assemblage (63 vessels) in 2006, 44% were recorded as abandoned while 32% were categorized wrecks and 24% were unknown (Price 2006:81). Two years later, Friedman analyzed 95 vessels in the Roanoke River and found that 57% were abandoned, 27% were shipwrecked, and 15% were unknown (Friedman 2008:87-89).

These results may be more indicative of source, as they are all vessels recorded through historical newspaper accounts. Shipwrecks are more sensational than simply abandoning a vessel

and therefore more likely to be documented. Abandonments are more likely to be discovered via archaeological survey. The aforementioned riverine surveys had a higher percentage of coverage for their study areas than this thesis was able to achieve.

Iincluding Albemarle Sound changes the dynamic of this study area from a riverine study to something more. The open-water sound provides opportunities for harsher conditions than those encountered in a sheltered, narrow river, leaving a chance for more catastrophic accidents. The sound also possesses few of the characteristics of graveyard and abandonment sites as described in previous studies (Babits et. al 1994; Babits and Kjorness 1995; Richards 2008). When looking at the entire ASCLD the proportion of shipwrecks to abandonments is 122 to 81. If the Albemarle Sound vessels are excluded, the proportion drops to 91 shipwrecks to 80 abandonments. Table 5 further demonstrates the effect of including Albemarle Sound. Shipwrecks remain the most common type of loss but the gap between wrecks and abandonments is cut in half.

	Abandonments	Shipwrecks	Unknown
Price (2006)	44%	32%	24%
Friedman (2008)	57%	27%	15%
Current ASCLD including Albemarle Sound vessels	33%	49%	18%
Current ASCLD without Albemarle Sound vessels	38%	44%	18%

TABLE 5. Cause of Loss breakdown for the ASCLD.

War is just one of many factors that influence trends in vessel loss. It is, therefore, important to chart vessel losses chronologically to distinguish periods of dramatic change in loss patterns. Correlations between these patterns and changes in the cultural landscape such as railroads, canals, and declining maritime trade can then be explored.

Figure 23 shows total vessel losses per year, with a noticeably declining trend. There can be several explanations for this. One, and perhaps the simplest, is the assumption that technologies in construction, sailing techniques, and navigational tools improve with time, making vessels easier and safer to operate, causing fewer wrecks. This is discussed later in the chapter.

Another explanation for the trend involves the cluster of losses in the 1860s, attributable to the Civil War. Albemarle Sound was an area active in Confederate efforts and significant action was seen on the region's waters, particularly on the Roanoke and Pasquotank Rivers (Barrett 1964:30, 174-175; Washington County Historical Society 1970:2-5; Escott 1984:266-271; Ready 2005:232-246). Thirty-seven (15%) of the vessels in the ASCLD were lost in the 1860s, twenty-nine (11%) of those thirty seven were lost during the war. After the Civil War (1861-1865) raised the vessel loss trend in the first half of the study period there are no further incidents of years with significantly high losses, thus creating the overall declining trend.
In the mid-20th century, there are many years with no recorded losses. Several dynamics of the Albemarle Sound landscape had changed by this period. Historical records suggest that heavy traffic to Albemarle ports had diminished by this time (Dill 1946:62; Hinshaw 1948:39-56; Rice 1954:69-73). A major cause of this traffic decline was the arrival of five new railroads in the Albemarle counties, all acting as competition for the maritime shipping industry. At the same time, highways and bridges were built and improved, lessening dependence on ferries and passenger transport (Crittenden 1931; Ready 2005;266-282). With less overall traffic on the water, it stands to reason there would be fewer shipwrecks. Kenderdine (1994:70) describes similar findings from her work on the Murray River, Australia, saying "The distribution of the

sites in the wreck universe also reflects the shifting dynamics of economy and trade, the advent of railways, the building of bridges, and the exploitation of natural occurring resources."

The low number of abandoned watercraft in the later decades is somewhat surprising. Kenderdine (1994:70) discovered high concentrations of abandoned barges on the Murray River, adjacent to old sawmills and townships. She concluded that they were left there after the timber resources were depleted. The lack of abandoned vessels in the Albemarle Sound region may be altered slightly if more information can be uncovered concerning the many "unknown loss" vessels currently in the database. The closing of canals does not appear to have had an effect on vessel losses either. If vessels, in particular barges used on the canals, were abandoned in large numbers after a canal closed they have yet to be identified as an abandoned vessel of that era.

Figure 24 charts losses by decade, demonstrating patterns of loss in another way. Again it can be seen that many vessels lost in the 1860s were abandoned, most of these due to war. It is interesting to note that abandoned vessels are only represented in 3 decades out of a possible 26. This demonstrates that abandoning vessels was perhaps not as common as sheer numbers would imply, as only 31% of abandoned watercraft (n=10) were known to be abandoned during peace time. This claim is made with the understanding that some unknown losses may have been abandonments and that 60% of the abandonments recorded do not have a recorded year of loss.

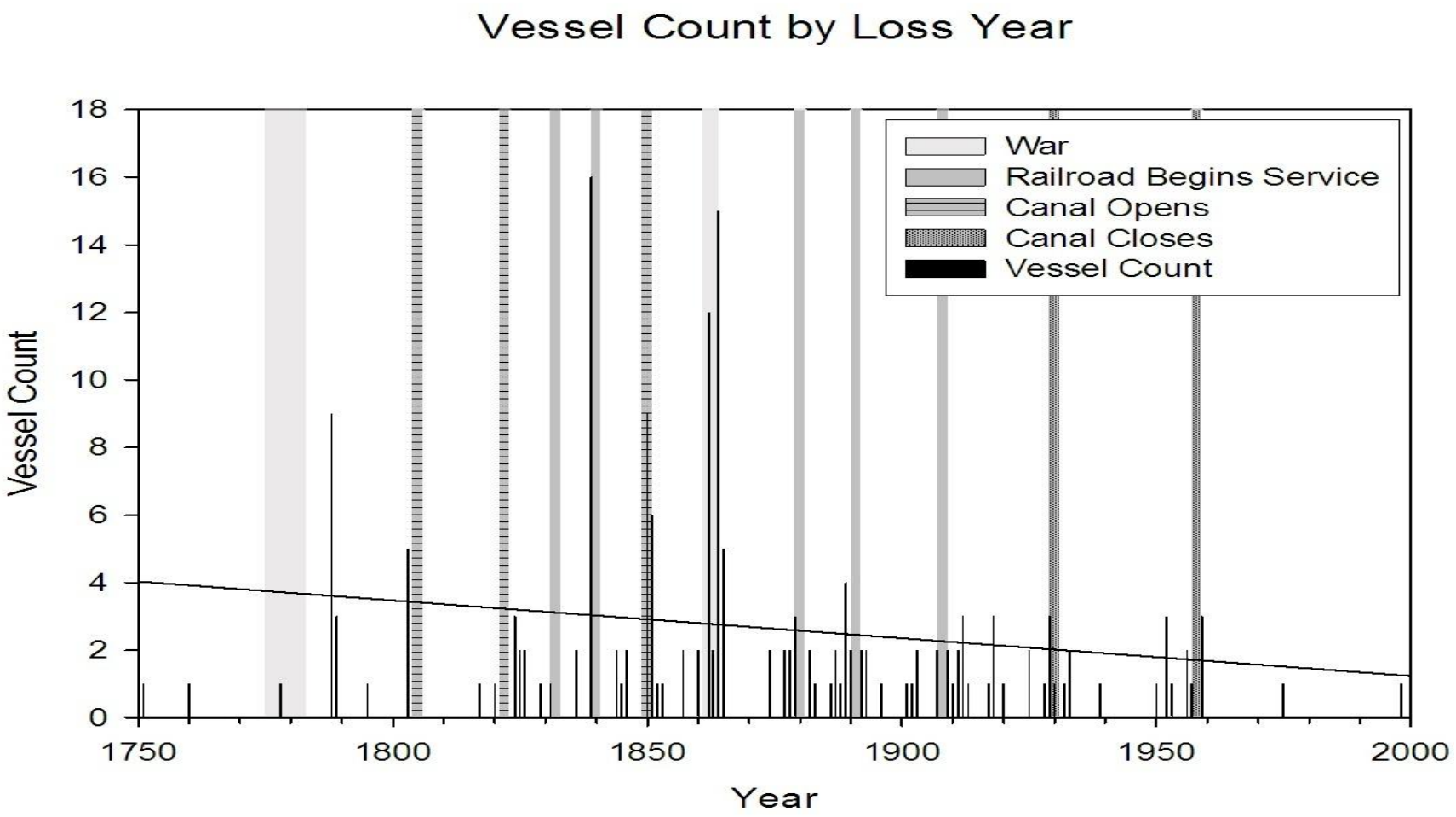

FIGURE 23. Vessel count by loss year with regression trend line, n=181. (Graph by author, 2010.)

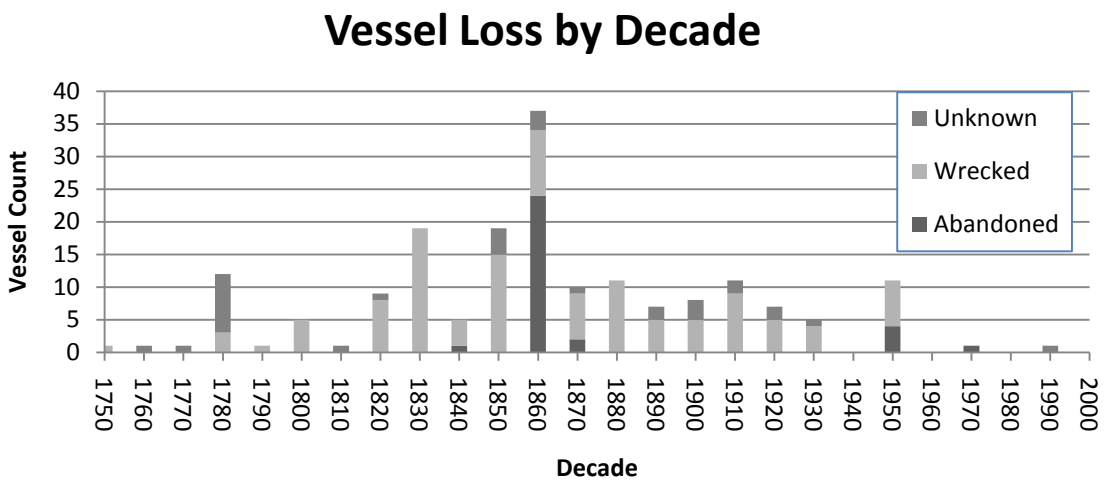

FIGURE 24. Vessel count by loss decade, n=183. (Graph by author, 2010.)

Figure 25 shows vessel losses by body of water. The highest vessel count (n=95, 38%) is found in the Roanoke River. There is potential for a slight misrepresentation because of the strong bias towards the Roanoke River, as mentioned in Chapter Two. The Roanoke River also has multiple Central Places located along its shores. The first port when traveling upriver from the mouth is Washington County's Central Place, Plymouth. This town is one of this study's Central Places of Higher Order. As the river winds through Martin County, three more ports are encountered; Jamesville, Williamston, and Hamilton. For the purposes of this study, Williamston has been chosen as the Central Place, one of Lower Order, for Martin County. This decision is based on Williamston being the county seat and declared an official port of entry early in the county's history. Finally, traveling north, the river leads to Halifax, Halifax County's Central Place, and Weldon. With this many ports along the river, a high representation of vessel losses is not surprising. The Roanoke River, as it was previously discussed, was also an active stage for the Civil War. Twenty-five (83%) of the thirty 1860s war losses are recorded in the Roanoke River. The Pasquotank River, with 24% of the lost vessels, has only one Central Place, Elizabeth

City, a Central Place of Higher Order. With the opening of the Dismal Swamp Canal, traffic on the river grew significantly during the 19th century as vessels traveled to and from Norfolk, Virginia, a major port on the east coast of the United States. The only other war losses recorded outside the Roanoke River occurred on the Pasquotank River.

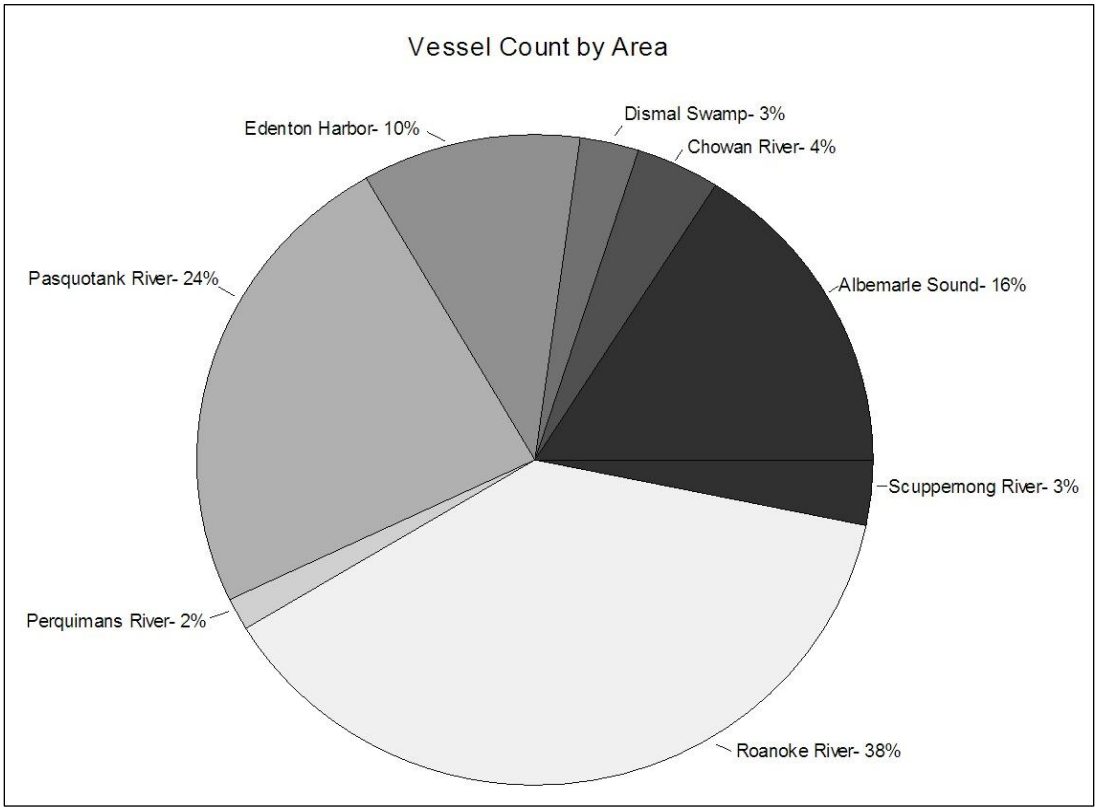

FIGURE 25: Vessel county by area of loss, n=249. (Graph by author, 2010.)

Edenton, with 10% of the vessels, is the third Central Place of Higher Order in the study area. All combined, the vessels wrecked or abandoned in the vicinity of a Central Place of Higher Order account for 31% of the entire ASCLD. Perhaps a more telling statistic, the vessels found near Elizabeth City, Plymouth, and Edenton make up 47% of the sites in the ASCLD with a known location.

The Chowan (4%), Perquimans (2%), and Scuppernong (3%) Rivers each had ports important to their respective counties, but these ports were Central Places of a Lower Order, meaning less traffic on those rivers. The Dismal Swamp (3%) is a difficult area in which to determine any sort of borders. Also, it is sometimes difficult to determine the difference between the Dismal Swamp Canal and the Pasquotank River and the canal could reasonably be included in the total vessel count of the Pasquotank River.

The greater expanse of Albemarle Sound holds 16% of vessel losses in the study. All coastal transport vessels coming into the region from other states or countries, before the completion of the Dismal Swamp Canal, were forced to travel on Albemarle Sound. Even after the Dismal Swamp Canal opened, vessels traveling to other ports beyond the Pasquotank River needed to cross the sound. Vessels transporting people within the region would often cross the sound as well. With such heavy traffic, a high percentage of loss is to be expected.
Central Places act as an economic hub for their complimentary regions. In the case of the Albemarle Sound region, poor overland travel networks forced residents to rely on waterways for importing and exporting goods. This led to ports developing into Central Places early in its settlement history. The region further exemplifies Christaller's theory by the distinct disparity between rivers containing a Central Place of Higher Order and the rivers with Central Places of Lower Orders. As distribution centers, Edenton, Elizabeth City, and Plymouth service a much larger complimentary region than the five smaller ports. Chapter Six will examine this topic further by examining the Central Places' location in space and any correlations or trends.

Technology

Technological innovation is rarely static (Volo & Volo 2002:49-62; Hattendorf 2007:29-77). Improvements in technology can occur quickly or stretch out over a period of decades or

centuries; advancements made in shipbuilding are no different (Chappelle 1951, 1967; McGregor 1997; Thiesen 2006). This section examines the construction of vessels of the ASCLD, noting trends in length, depth, gross tonnage, and propulsion. Changes in ship design are indicators of changes in behavior and decision making and may expose potential shifts in the maritime cultural landscape. This section also looks at the lifespan of vessels, breaking down life expectancies based on cause of loss and build year. Extended use-life of vessels through time can support the theory of improved ship design (technological improvements), but lifespan trends also have the potential to reflect an overall economic outlook.

In her study of the Murray River vessels, Kenderdine noticed dissimilar trends between dimensions of paddle steamers and barges. The paddle steamers showed a decrease in length and draught over time. She explained these developments by the need to adapt to economic constraints, for instance the availability of raw materials and getting satisfactory performance using a principle of least effort construction. Barges increased in length with an initial decrease in draught, but this reversed during later lock-building phases. She credited the barge trends to the changing cargo types and the need for vessels to perform several different functions (Kenderdine 1994:86-89). Finally, Kenderdine pointed out that "accumulated knowledge of river conditions would have been the initial stimulus for these [technological] changes" (Kenderdine 1994:88). Changes in design for both the paddle steamers and barges demonstrated a change in the way people involved with shipping on the Murray River viewed their resources. Decisions were deliberately made to change the way vessels were built in order to more efficiently use the natural resources (the river and ship-building materials). Similar analyses highlighting the connection between the natural landscape and cultural change in the Albemarle Sound region will be discussed in further detail throughout this section.

The analysis of vessel length shows an increasing trend (Figure 26). While length in the early years of the data collection averages approximately 60 ft., it is more than double that by the mid-20th century. It is important to note that while the trend demonstrates growth, the number of vessels hovering around 60 ft. in length remains significantly high from 1850 to approximately 1920. The data suggest that a small percentage of vessels with great lengths act as outliers raising the average. Data from Richard Stephenson and William Still's *An Analysis of Interstate and International Vessel Construction in North Carolina* (1993) shows that length for over 2,000 North Carolina built vessels averaged only 55.16 ft. This suggests that, even with improvements and dredging in the canals, environmental issues of shallow waters and difficultly navigated channels continued to restrict vessel length.

Starting in the mid-19th century, vessel length becomes more diverse. By the start of the 20th century, the diversity is even greater. This is indicative of a specialization of the vessels which occurred over time, likely in response to more specialized shipping needs. With lumber mills and agricultural products requiring different modes of containment, barges and other vessels were modified or built to provide for these needs. This is evidence of a more commercialized culture than the area had in the first half of the study period.

Perhaps even more significant than length restrictions are the limitations of hull depth, or draught. As previously discussed in Chapter Four, shallow water acted as a hindrance to the local shipping industry throughout history. Figure 27 shows only a very small increase in draught. This could be a demonstration of two things- first, the hindering effects of the Albemarle's shallow waters did not give ship owners incentive to build or purchase vessels with deeper draughts; or secondly, shallower vessels with proportionally greater lengths were being used for

potentially greater speed. Provided the new designs do not forfeit cargo space, greater speed is often a strong consideration for design of new transport vessels.

Figure 28 breaks down draught even further by categorizing draught dimensions by loss area and year built. Of the eight waterways represented, only three have a sufficient number of vessels with both draught and build year recorded. The other five areas are too small a sample to make a valid assessment. The three that did have a reasonable sample show a surprising result. Both the Pasquotank and Roanoke River assemblages show a decline in vessel draught over time.

Only the Albemarle Sound proper shows a pattern of increasing draught. Knowing that the database as a whole shows an increase in vessel draught, it was expected that individual waterways would increase as well, especially rivers with high levels of loss. That the Pasquotank and Roanoke Rivers show a decrease is most likely representative of both rivers supporting considerable barge traffic. Ten percent of the vessels in the database are classified as barges. Barges have a shallow draught due to their flat bottoms which make them ideal for river navigation. Typically they have a smaller draw and different hull shape than sailing or steam vessels. This differs from Kenderdine's findings in which Murray River barges showed an increasing draught throughout the period of 1820-1960 (Kenderdine 1994:15, 89).

Price (2008:111-117), during his research of the Roanoke River, noticed that vessel length increased an average of approximately 20 feet between 1830 and 1975. Vessel draught showed little change. He explored three factors while looking at the Roanoke River as a closed unit which all led to inconclusive results; environmental determination, the dredging of the river, and potential size restraints dictated by the regional canals.

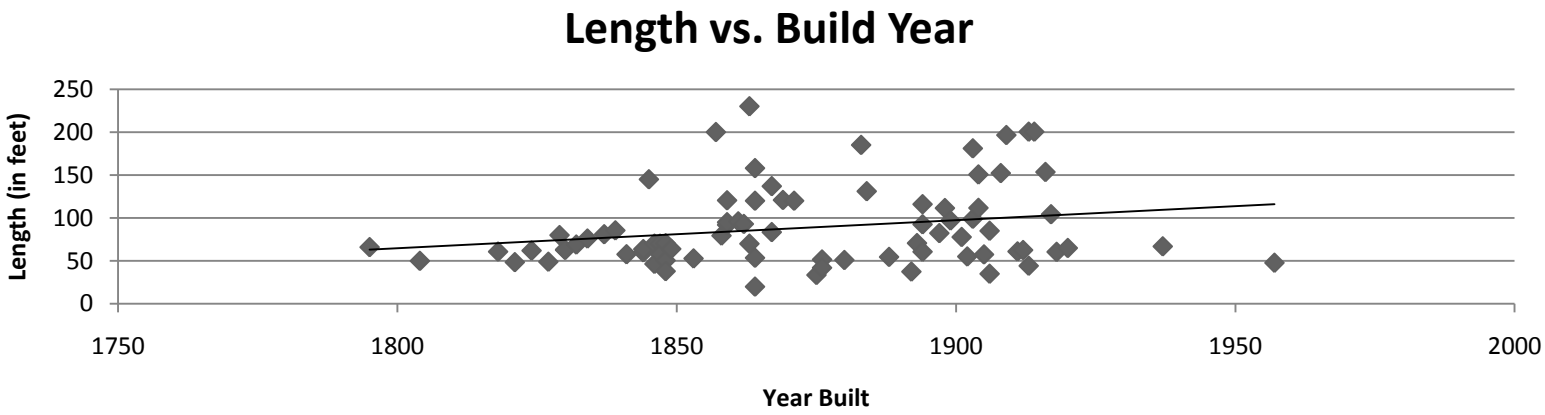

FIGURE 26. Vessel length by year built, n=80. (Graph by author, 2010.)

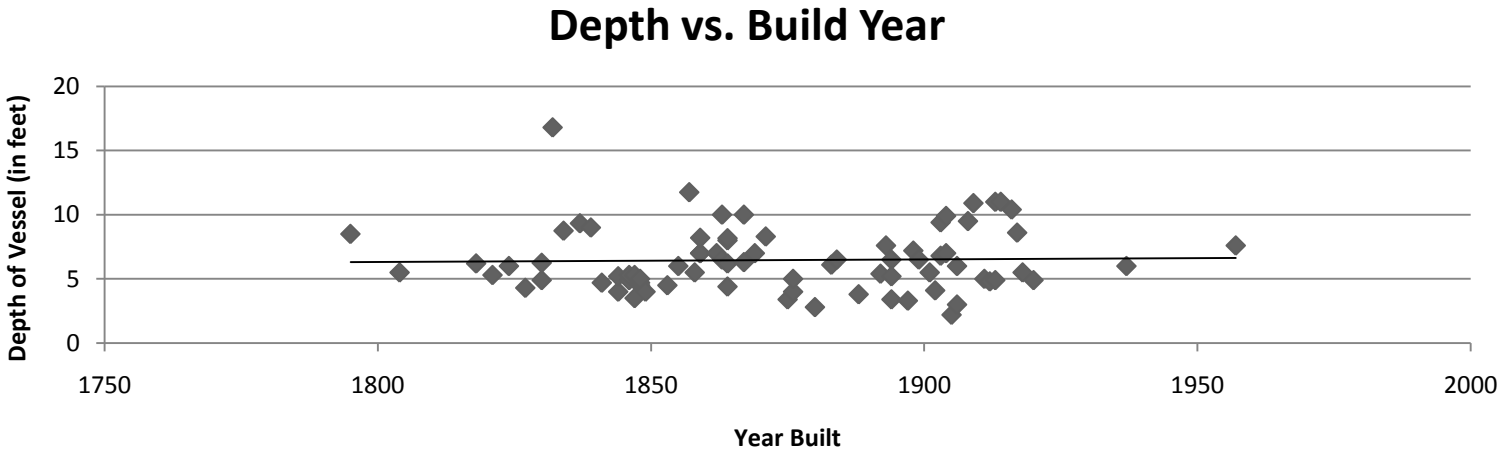

FIGURE 27. Vessel depth by year built, n=78. (Graph by author, 2010.)

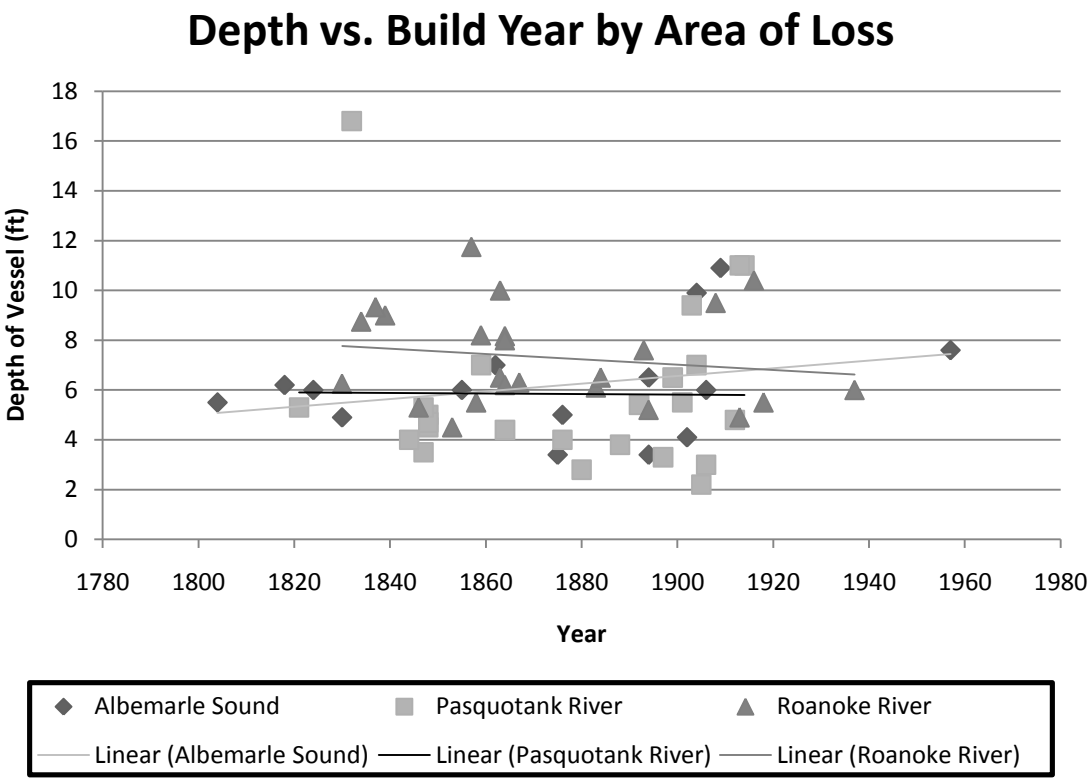

FIGURE 28. Vessel depth by year built and area of los, n=63. (Graph by author, 2010.)

Examining vessel tonnage (Figure 29) shows an increase in cargo capacity over the course of the study. Typically there are two types of tonnage measurements assigned to a vessel-gross tonnage and net tonnage. Gross tonnage measures the total internal space in the vessel. Net tonnage measures the internal capacity available for cargo and passengers, excluding space taken up by machinery, crewspace, and stores (Desmond 1984:25-27). This analysis is based on gross tonnage, the most common measurement of tonnage recorded in the historical record as well as a better indicator of hull size.

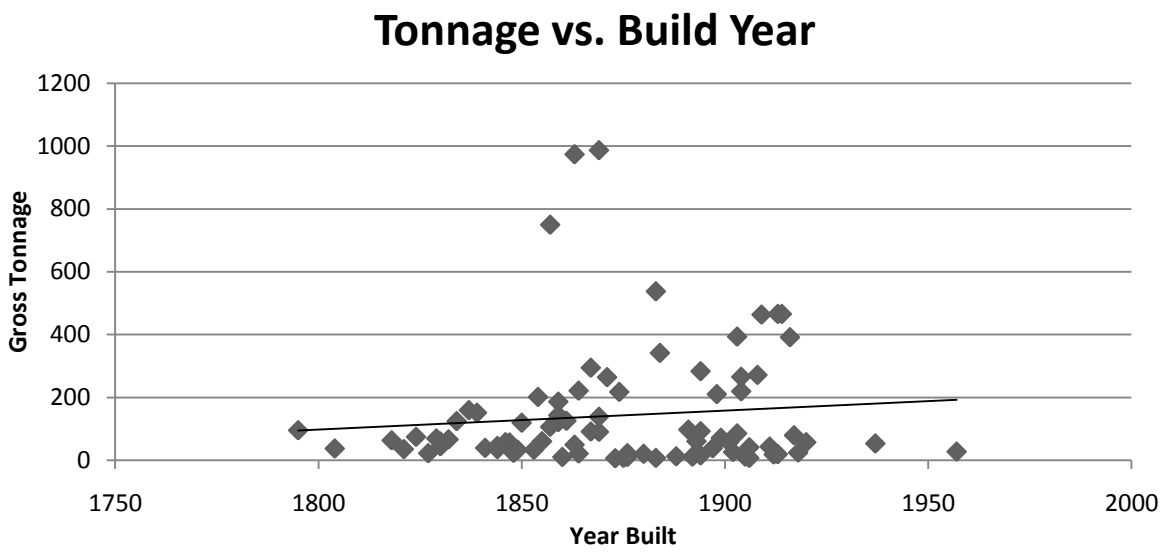

FIGURE 29. Gross tonnage of vessel by year built, n=84. (Graph by author, 2010.)

Knowing that length and depth of vessels grew over time, it is reasonable to hypothesize that tonnage will grow as well. It comes as no surprise to see a large cluster of vessels that fall well below the trend line of tonnage, as in the case of length. The average tonnage of North Carolina built vessels (n=3069) is only 55.12 tons (Stevenson and Still 1993). Larger sized vessels start appearing in the 1850s. This follows a national trend in which the average tonnage of wooden cargo vessels built in the United State tripled in size from approximately 500 tons to over 1,500 tons between 1830 and 1850 (Thiesen 2006:61). While technology was making it possible to build and navigate larger ships on the Albemarle's waterways, environmental characteristics left firm limitations. The Albemarle Sound region waterways were not capable of sustaining vessels that large in size. Only one transport vessel in the ASCLD, *Olive* (1903), approached the national average at 987 tons. By the turn of the century, river improvements did allow for larger vessels. The exact location where the vessel capsized is unknown, making it

difficult to explain the nature of the *Olive.* Two other outliers, *Otsego* and *Southfield*, were military vessels lost on the Roanoke River in 1864.

A major consideration in ship technology is propulsion type. Figure 30 displays the breakdown of propulsion found in the ASCLD, using five major categories; Steam, Sail, Sail with Auxiliary Motor, Oil, and None. These categories are dominated by steam powered vessels that make up 47% of the vessels with a known propulsion systems. Sail and oil powered vessels each make up 17% of the sample. Vessels with no propulsion, namely barges, make up 12%. The graph is rounded out with sailing vessels that had an auxiliary motor at 7%.

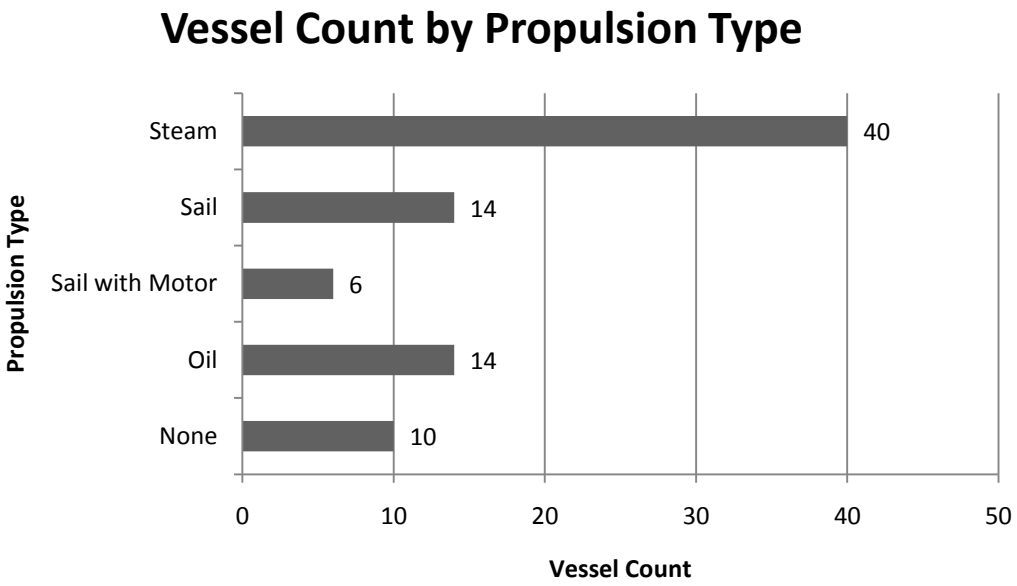

FIGURE 30. A graph displaying a breakdown of propulsion types, n=74. (graph by author, 2010.)

Franklin Price (2006:107-109) conducted a similar comparison of vessels located in the Roanoke River. He found that sailing vessels were more likely to be abandoned while steamers made up a majority of the shipwrecks. He hypothesized that it was more affordable to abandon sailing vessels which lacked the complexity and added cost of machinery necessary for steam

powered vessels. He also found that wooden-hulled steam vessels made up the largest proportion of shipwrecks. The potent mix of early steam technology and wooden hulls created a high potential for explosions and fire and could be a leading factor in Price's results.

A study of the expanded ASCLD shows similar results. Sixty-three percent of the abandoned vessels were either sailing (without a motor) or had no source of propulsion. Only 17% of the abandoned vessels used oil or steam power. An examination of the shipwrecked vessels shows 90% of the vessels were oil or steam powered. Ten percent were sail or had no source of propulsion.

Figure 31 shows the lifespan of vessels, a calculation based on the year they were built through year of loss. The trend line shows a definite upward drift in the lifespan of wrecked and abandoned watercraft over time. Better construction techniques and materials are one explanation but this view is difficult to properly assess. Only 60 (24%) vessels in the ASCLD have a recorded hull material and of those 60, wood vessels dominate the database with a count of 55. This results in an inadequate data sample for further investigations comparing construction materials.

The graph also shows that the lifespan trend of abandoned vessels is nearly identical to that of wrecked vessels, demonstrating an overall trend towards longer lifespan. Both Price and Friedman found similar results in their Roanoke River studies with expected lifespans nearly doubling from the 19th to the 20th century (Price 2006:93; Friedman 2008:80-81). It is somewhat surprising to see a nearly identical trend because it was initially hypothesized that abandoned vessels would have, on average, a longer lifespan than shipwrecks. This hypothesis was based on the assumption that most abandoned watercraft in the ASCLD would fall into the category of "deliberate abandonment," or premeditated abandonment as defined by Richards

(2008:10). Vessels that are deliberately discarded have reached the end of their active use-life, suggesting a long lifespan in most cases. Because shipwrecks are unexpected and can occur at any time, early or late in a ship's expected use-life (a reasonable length of time an owner might expect to have a working vessel), it was hypothesized that they would have a shorter average lifespan than abandoned watercraft.

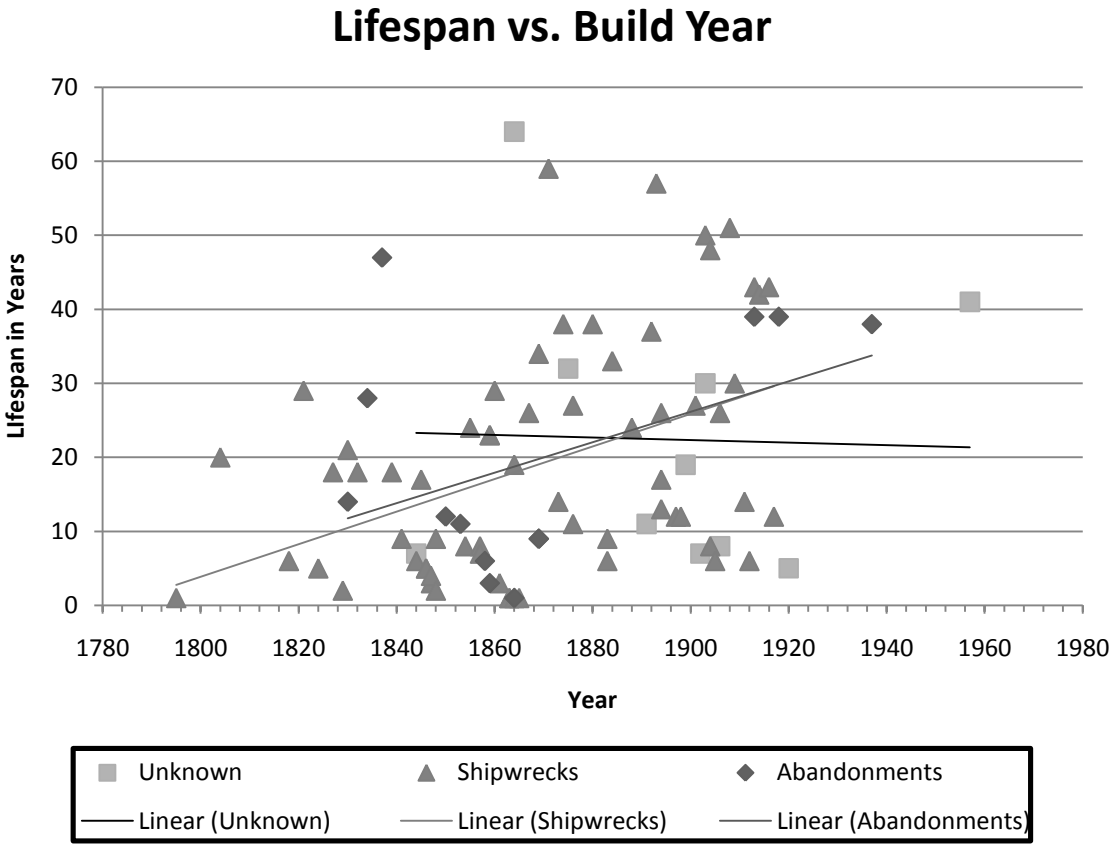

FIGURE 31. Lifespan by year built, n=86. (Graph by author, 2010.)

The surprising result of a lower lifespan for abandoned vessels requires further inquiry. The first consideration is the percentage of vessels that can be categorized as "consequential abandonments," vessels deliberately destroyed for the immediate purpose of saving lives, cargoes, or structures from danger or damage (Richards 2008:9). The average lifespan for

abandoned watercraft in the ASCLD (n=13) is 18.15 years. Six of those vessels are war-related abandonments and can be classified as consequential abandonments. These vessels may have been in good repair and functionality, but were sacrificed for a greater purpose. Peacetime abandonments average a lifespan of 21.57 years, three years longer once the war-time vessels are removed from the equation.

Conversely, shipwrecks average a lifespan of 19.11 years, higher than the overall average for abandoned watercraft. This could suggest that many wrecking events were, if not directly caused by the old age of the vessel, were assisted by it because of multiple repairs and alterations, weakened support systems, or other general wear and tear. Without more supporting data on subjects like maintenance, repairs, and exact wrecking cause, it is impossible to determine if age played a factor in the wrecking events. Thirty-seven vessels wrecked before reaching the average 19 years of use-life, while 27 vessels wrecked after. With so many vessels wrecking prior to reaching the average, old age is likely not a major factor in wrecking events, but further research is needed before any conclusions can be made.

Technological change does not occur on a whim. Souza (1998:104) states, "According to economic determinists, in a modern capitalistic economy technological change is primarily a matter of demand and is driven by the market." Technological trends seen in the Albemarle Sound region show that vessels with greater length and more cargo space began traveling the region's waters beginning around 1850 through approximately the 1920s. The longevity of vessels shows a similar trend. Throughout this thesis' study period, major advancements were made in ship propulsion. Vessels using sail or no propulsion were more likely to be abandoned, demonstrating that they were more expendable than the technologically superior steam and diesel ships. This suggests a drive by the market for bigger, more reliable, and more technologically

advanced vessels. Hull material, a major factor in technological advancement, is not sufficiently represented in the ASCLD. Certain barriers, primarily shallow water, restricted great changes in vessel growth, creating a niche for other technological advancements such as railroads or a shift to larger, more aptly equipped ports such as Wilmington, NC.

Trade

Trade was a major factor in the water traffic of this region from the time of the earliest settlers until the 20th century. This final section analyzes the function of vessels recorded in the ASCLD, highlighting the important role different types of watercraft had on the Albemarle Sound, while also noting the method of loss. Trade is examined further by charting the state of a vessel's home port and where vessels were built in efforts to determine where the Albemarle Sound region was trading. Lastly, the types of cargoes carried by vessels in the ASCLD are examined.

The history of Albemarle Sound shows that there was great dependency on watercraft throughout the decades, particularly in the first half of the study period (1750-1900) (Clonts 1926). Figure 32 shows the three major categories of vessel function on the Albemarle Sound region waters. The support category includes vessels such as tugboats whose main purposes are to support or assist other watercraft. Transport encompasses vessels involved with trading and shipping, both cargoes and passengers. Finally, warfare includes ships that were active military craft when lost, even if they spent most of their use-life under one of the other two categories.

The data shows that a majority of the wrecked and abandoned vessels were involved with transport of cargoes and passengers (68% of the vessels with a known function at time of loss). Most vessels recorded in the ASCLD are small and self-reliant. There are a few barges, but otherwise there are not many examples of vessels requiring a support vessel. Coverage of war-

time activities on the waterways has already been given and here we can see the significance of the war time losses. Transport of commodities and people is clearly the dominant function of watercraft lost in the study area.

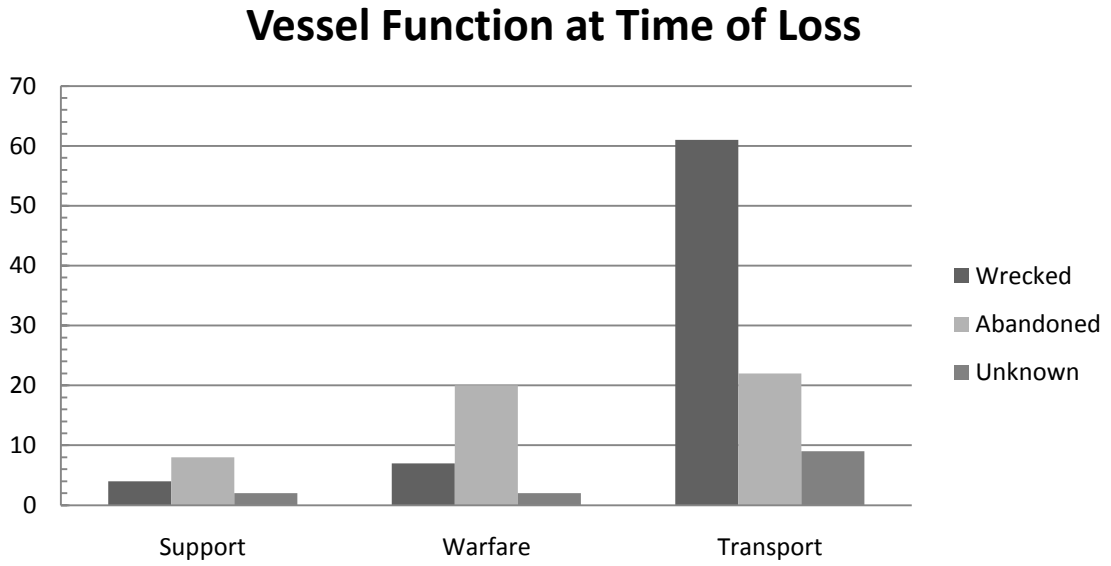

FIGURE 32. Vessel function at time of loss, n=135. (Graph by author, 2010.)

In his earlier research of the ASCLD, Price (2006:104-106) claimed that much of the shipping out of the Albemarle traveled north. This trend began during the colonial period and continued throughout the study area's dependence on maritime transport. New data added to the ASCLD supports this claim. The first data set (Figure 33) displays Home Port State, or the state in which a vessel's home port is located. It is not surprising to see that North Carolina home ports represent the largest number of vessels. Virginia and New York rank second and third. Pennsylvania and Maryland add few to the count. Several other states have vessels in the total count, but are not of great significance. This data supports Price's interpretation that most of the water borne traffic was involved in trade with the northern colonies before the Revolutionary War, a trend that continued after statehood was achieved. There is little archaeological evidence

demonstrating trade with southern colonies or states, though there are historical accounts of such trade (Clonts 1926:18; Crittenden 1931c:4-6; Butler, 1989:45).

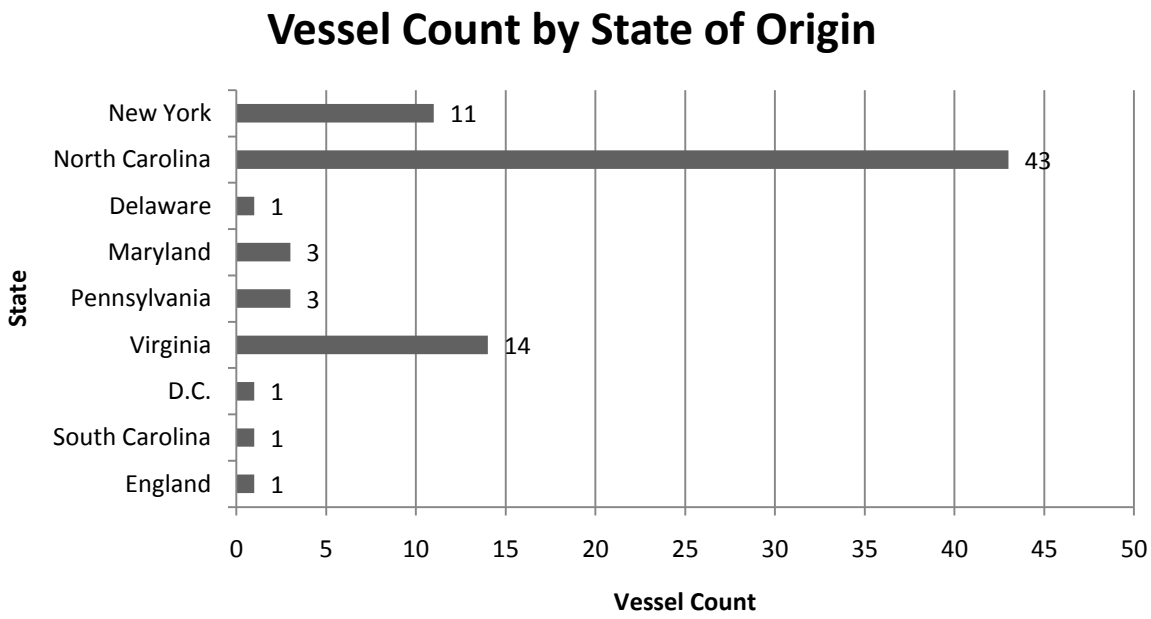

FIGURE 33. Vessel loss by the Port of Origin state, n=78 (Graph by author, 2010.)

Statistics showing where vessels in the ASCLD were built can be seen in Figure 34. The result appears similar to that of home port state. The graph demonstrates that a majority of vessels were built in North Carolina. Of the 29 North Carolina vessels, 20 were built in the Albemarle Sound area. New York, known as a large ship-building center, is significant as a state responsible for building ships that were eventually lost in Albemarle Sound waters. New York was a major trading partner, as was Virginia, another large ship building contributor. It is Maryland, however, that is the second largest producer of ships in the ASCLD, behind only North Carolina.

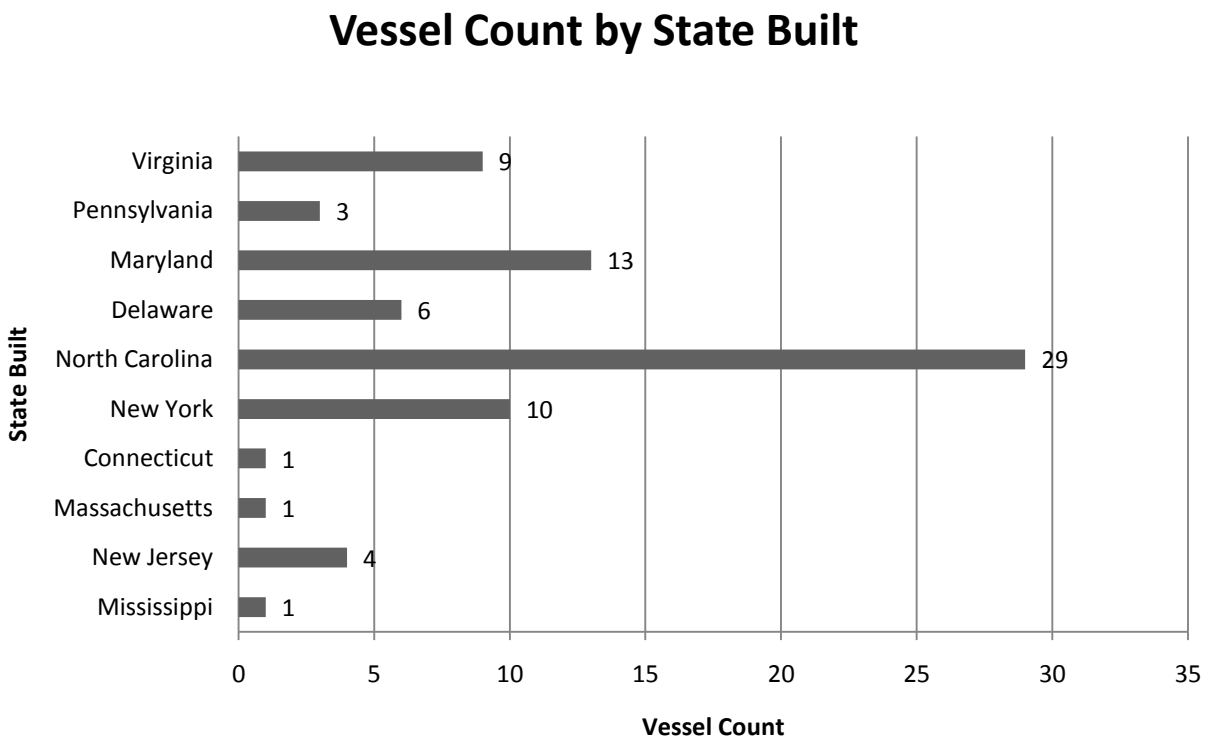

FIGURE 34. Vessel loss by state built, n=77. (Graph by author, 2010.)

Maryland includes the Chesapeake Bay, a water system to the Albemarle Sound geographically and topographically. Ships built for Chesapeake Bay service are often well-suited for the Albemarle Sound. With many early Albemarle settlers coming south from Virginia, it is reasonable to assume that they brought their boat building traditions with them. Log building and transverse plank deadrise bottom traditions are two examples of traditions that came south (Babits et al. 1995:34). Centerboard schooners are another tradition the two regions share.

Ninety-two vessels in the ASCLD have been categorized as transport vessels. Cargoes for 55 of those vessels are unspecified. Figure 35 shows the breakdown of cargoes, but because less than half are known, it is hard to draw solid conclusions. The importance of corn as a major crop was discussed in Chapter Four. Ten percent of the vessels were lost with corn on board, the largest percentage for any cargo type. Two of these vessels were bound for New York, two for

Charleston, South Carolina, one to Norfolk, and one for Murfreesboro, North Carolina. Four had unknown destinations.

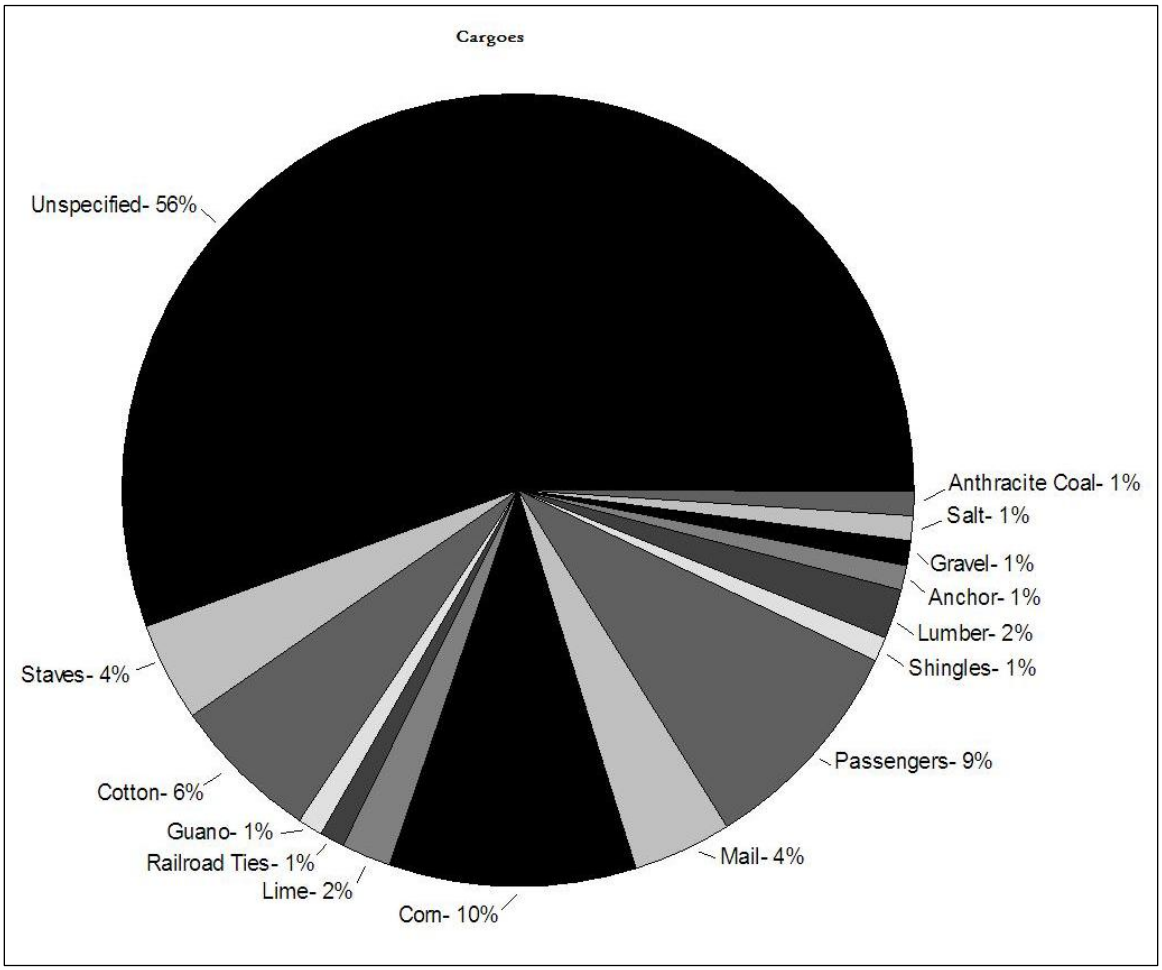

FIGURE 35. Vessel count by cargo at time of loss, n=99. (Graph by author, 2010.)

The second largest cargo is passengers (9%). Of the nine vessels with passengers, research suggests only three are specifically designated as a passenger vessel. All these vessels were lost on a major water system: three on Albemarle Sound, three on the Roanoke River, two on the Chowan River, and one on the Pasquotank River. Five vessels are recorded as carrying cotton and four carried staves. These items are credited with regional importance, as discussed in

Chapter Four. Other cargoes were recorded on only one or two vessels with the exception of mail which was recorded on four vessels.

The analysis of the ASCLD concerning trade issues shows that a large majority of the vessels included in the database functioned as trade vessels. Most vessels had home ports in North Carolina or states further north. An examination of where the vessels were built showed similar results. There is little archaeological evidence of trade with colonies or states south of North Carolina. An examination of cargoes provided no solid conclusions, but vessels were recorded carrying several major cash crops and naval stores as the historical record would suggest. Corn, cotton, and staves are the highest percentage commodity cargoes.

Conclusion

The comparative, quantitative approach of analyzing the vessel assemblage in the ASCLD provided many observations. The manner in which vessels were lost differed from the results suggested in literature regarding other riverine studies, while also showing a correlation to the importance of Central Places in the study region. An examination into technological changes showed a response to the need for bigger and more specialized watercraft. Trade patterns demonstrated close ties to northern ports and shipbuilding, but little insight into goods being traded.

Unlike previous riverine studies, the ASCLD contains almost a two-to-one ratio of shipwrecks to abandoned watercraft, as opposed to the results of other researchers who found a majority of abandoned watercraft (Shomette and Eshelman 1998; Price 2006; Friedman 2008). This result is likely more indicative of the need for further survey. Since gathering the data used for this thesis, further research conducted in the Pasquotank River has uncovered a graveyard of

78 vessels (Smith 2010). Due to the time of this discovery, these vessels have not been included in the detailed analysis of this thesis.

A comparatively large number of vessel losses were recorded adjacent to the major ports on the Pasquotank River, the Roanoke River, and at Edenton. The strong correlation between vessel loss and Central Place importance agrees with Christaller's Central Place Theory. Ports categorized as Higher Order serve a larger complimentary region, attracting more traffic from farther distances. This results in more shipwrecks and abandonments. As a port's importance as a maritime trade center dwindled in the 20th century, vessel losses also declined.

Technological changes brought longer and slightly shallower vessels to the study region during the 1850s through the 1920s. The later ships had a larger cargo capacity as well, allowing for greater quantities of cargo shipments. Changes in ships' dimensions were likely inspired by a growth in market demands. Advancements in vessel propulsion were occurring on a global scale throughout the study period and are demonstrated by the lop-sided number of sailing and no-propulsion vessels abandoned relative to the number of shipwrecks counted among the steam and oil powered vessels, suggesting that technologically inferior vessels became expendable. Lifespans of shipwrecks were surprisingly close to those of abandoned watercraft, but no solid conclusions have been reached using this data.

Finally, trade patterns revealed a strong tie between the Albemarle Sound region and northern ports. Transport vessels, which far exceeded support and warfare vessels, were primarily built and registered in North Carolina. Trade with Virginia and New York was well represented, as were ships built in Maryland. The geographical similarity between Albemarle Sound and Chesapeake Bay is a likely factor for this pattern.

This chapter attempted to illustrate patterns of loss in the Albemarle Sound region through statistical methods. The next chapter adds a geo-spatial element to the assemblage, placing the vessels into their geographical context. By doing so, a broader understanding of the region's cultural and natural landscapes will be obtained and can then be compared more fully to the historical record.

Chapter 6:
Spatial Transitions and Central Place Importance

Introduction

The vessels categorized quantitatively in the previous chapter have much more information to offer than can be communicated with tables and graphs. In this chapter the vessels will be placed in their geographic context, allowing for analysis based on their proximity to one another, Central Places and their location in the landscape. Working from the foundations set by Christaller (1966) and Westerdahl (1994), as well as the previous regional and riverine studies, this geographic interpretation of the ASCLD will complement statistical interpretations of the previous chapter to create a larger contextual understanding of the Albemarle Sound maritime landscape. This chapter will follow the same structure as the previous chapter. It will first examine geospatial patterns involving manner of loss, technology, and trade.

The observations resulting from Kenderdine's work on Australia's Murray River (1994, 1995) and Babits and Kjorness's work on Pamlico Sound (Babits and Kjorness 1995; Babits et al. 1995) suggest that clusters of vessels will be found abandoned in the upper river areas, while river channels and other heavily traveled areas will likely remain clear of obstructions. Studies conducted by Price (2006:127-131) and Friedman (2008:97-143) on the Roanoke River show clusters of wrecks and abandonments around the port towns of Plymouth and Jamesville. There are also several examples of abandonment clusters appearing at the mouths of smaller creeks and tributaries. This is credited to tactics acted out during the Civil War. The manner of loss section will highlight similar sites found throughout the study area.

Due to the constraints put on watercraft traveling the region's shallow waters and the canal lock system, it is possible that patterns will appear showcasing these limitations on vessels.

For example, engineer George Elliot reported many difficulties in the upper regions of the Perquimans River due to narrow width, stumps, overhanging branches, and "Roundabouts," or sharp bends (Report of the Chief of Engineers, U.S. Army, 1884). Putting sites into a geographical context will allow assessments to be made regarding the rivers' natural landscape in correlation with a vessel's dimensions. Chapter Five demonstrated a diversity of vessel sizes throughout the study area. This section will look for trends in the geo-spatial patterning of that diversity.

The trade section will consist of a comparison of losses based on home port in an attempt to determine any trends in which vessels from out-of-state are lost compared to local vessels. The section will show where all vessels were wrecked or abandoned. An examination of cargoes lost will be made in an attempt to identify trends in commodity distribution. Last, an examination of vessel loss over time is conducted. Chapter Four demonstrated a shift in importance between Central Places, beginning with Edenton during the colonial period and moving to Elizabeth City and Plymouth in later years. Mapping vessels by their year of loss demonstrates the shift in importance as it is understood historically. The maps can also illustrate correlations to other significant periods in Albemarle Sound's regional history, such as the development of railroads and highways, opening and closing of canals, and war.

Similar to the statistical analysis, lack of complete vessel records placed several limitations on the spatial analysis. One challenge came in dealing with vessels that had no known location other than the water system in which they was shipwrecked or abandoned. Because valuable answers to some questions could still be gained without needing the precise final resting place of each vessel, these ships were included in the analysis. Maps displaying a single water system show an "Unknown Location" box drawn around vessels at the mouth of the river. The

map showing the entire project area became too cluttered with the boxes so they have been excluded, although the vessels with the unknown location remained mapped.

Manner of Loss

The statistical analysis of manner of loss demonstrated that vessel losses occurred more frequently in rivers containing a Central Place of Higher Order. This chapter attempts to examine that trend in more detail, taking into account where on the water systems these vessels ended their use-life. Kenderdine (1994:70) observed that wreck sites were typically found in major crossing places, as well as in deeper water or water holes near ports, locks, or weirs. This allowed channels and ports to remain free of debris. She also noted that small tributaries tended to act as graveyards. In addition, she observed that high barge concentrations were found in townships that were built along major forests. Research in the Pamlico and Pungo Rivers, North Carolina (Babits and Kjorness 1995; Babits et al. 1995:103) found similar results.

Following Kenderdine's work on the Murray River, Richards observed similar trends when analyzing his database of abandoned vessels in Australia. He stressed that authorities endeavored to keep abandoned vessels from becoming navigational hazards (except in cases of war). He also saw that ships' graveyards tend to appear near areas of commercial activity, noting that almost every major Australian port had an area for vessel discard. Shipbuilding, repair, and salvage all occur near ports, making tham a logical destination for unwanted vessels. (Richards 2008:84-87).

Influenced by Richards' work, Price (2006) and Friedman (2008) looked for trends of vessel loss on the Roanoke River. Price observed that shipwrecks were more likely to occur near ports while abandoned vessels were found at various points on the river, as opposed to those near a port (Price 2006:127). The field survey of the Roanoke River discussed in Chapter Two

allowed for further investigation of secondary and tertiary rivers. As Friedman analyzed the new data, he was able to discern vessels, which he assumed to be abandoned, in these out-of-the-way areas. He also observed four vessel clusters near the ports of Plymouth, Jamesville, Williamston, and Hamilton. His fifth cluster was located near an old landing (Friedman 2008:114-115).

Figure 36 displays all vessels in the ASCLD whose approximate locations are known. A buffer has been super-imposed over each Central Place. The smaller, darker circle represents a zone with a five-mile radius, the outer, lighter circle represents a buffer with a ten-mile radius. Nearly all vessels fall within these buffers. In fact, only ten (6%) fall outside these boundaries.

The clustering of vessel losses near the Central Places is a demonstration of their centrality, or "…the relative importance of a place with regard to the region around it…" (Christaller 1966:18). The Central Places act as hubs for trade in their complimentary regions, thus attracting transport vessels. Their importance also has a tendency to make them targets during warfare. Further evidence of centrality is the contrast of importance between Higher and Lower Order Central places. Hertford, Windsor, Halifax, and Columbia have no vessels outside their five-mile buffer zones. Weldon, Hamilton, and Jamesville are Central Places of Lower Order found along the Roanoke River and display similar results. Edenton and Elizabeth City, Central Places of Higher Order, have vessels reaching into the ten-mile buffer. Williamston and Plymouth are unique cases. Two abandonments exist just slightly within the ten-mile buffer, however, that area overlaps with Hamilton's buffer zone. These vessels were abandoned for tactical purposes during a war and therefore have less to do with economic importance. Plymouth is the third Central Place of Higher Order and contains many vessels within that five-mile buffer. It becomes harder to determine what vessels lay in the ten-mile buffer, however, because of the significant overlap with Jamestown's zones.

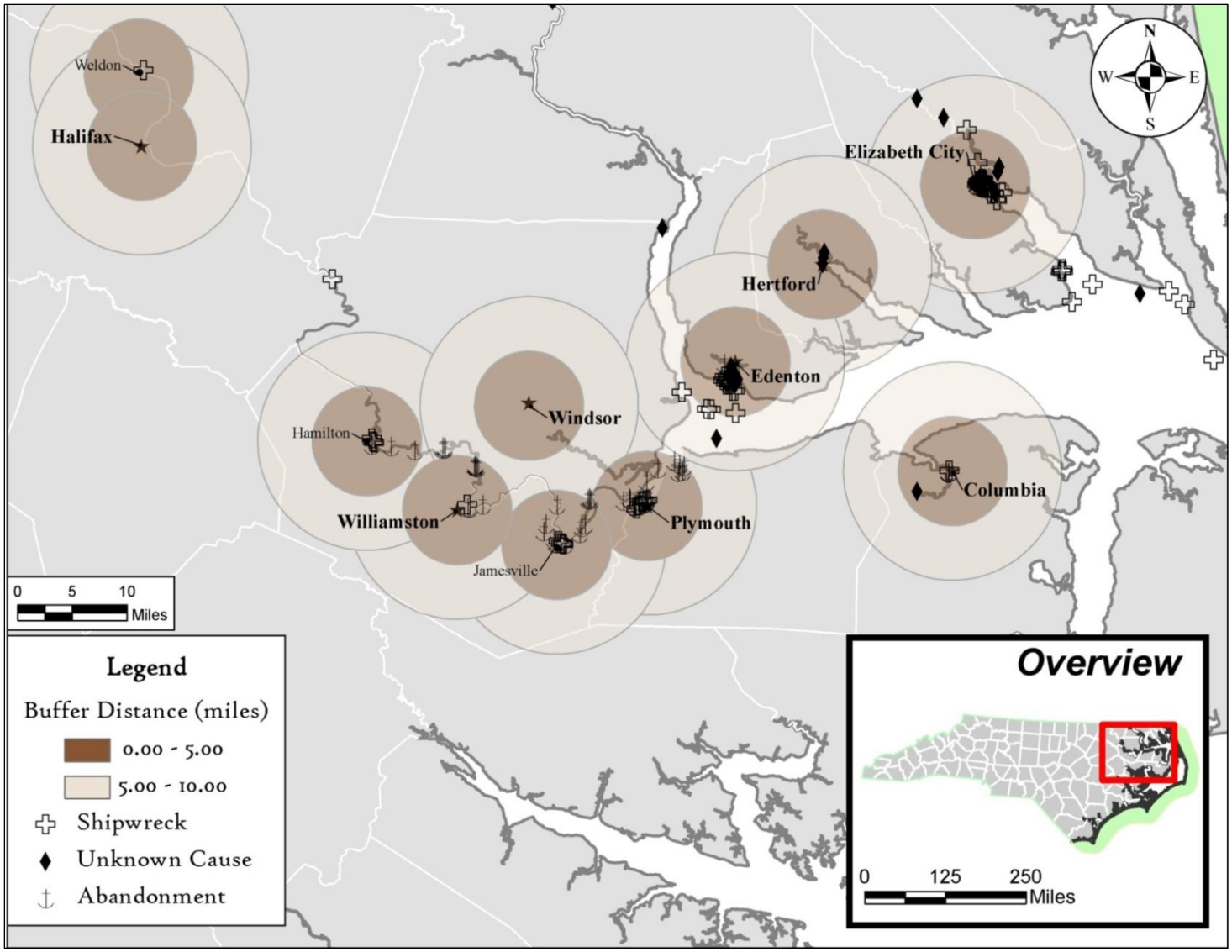

FIGURE 36. A map of the Albemarle Sound region vessel losses with approximate loss locations known, n= 164. (Map by author, 2010.)

Nevertheless, the larger expanse of vessel losses associated with the Central Place of Higher order is explained by Christaller (1966:18) who says, "The greater the surplus of importance of the Central Place, the greater the size of its complimentary region."

Figure 37 displays abandoned vessels included in the ASCLD, showing that abandonment clusters remain scarce outside of the Roanoke River. This is an example of research bias and should not be seen as indicating that the Roanoke River acts as the region's dumping ground. As discussed previously, abandonments are very rarely spectacular and are therefore less often recorded in the historical record than wrecked watercraft. The exception to this is events such as wartime scuttling. Many abandoned vessels in the Roanoke River were identified through archaeological survey, which has not been executed as thoroughly on the other river systems.

The Perquimans River becomes an interesting case study due to the negative evidence found there. The Perquimans River fits the models formed by Babits and Kjorness (Babits et al. 1995; Babits and Kjorness 1995) and Kenderdine (1994, 1995) with its many coves and creeks that would appear likely places to find abandonments; yet not one vessel was found on the most recent survey. Three barges were recorded, likely abandonments, in the river in 2004 by the UAB. All three are located near the town of Hertford, Perquimans County's Central Place.

Figure 38 displays the shipwrecks in the ASCLD with known approximate wrecking locations. Again, the tendency for vessels to wreck near a port is clear. Another reason for this trend may be due to the nature of research. Shipwrecks occurring near towns are likely to be noticed and make headlines, therefore making a mark in the historical record.

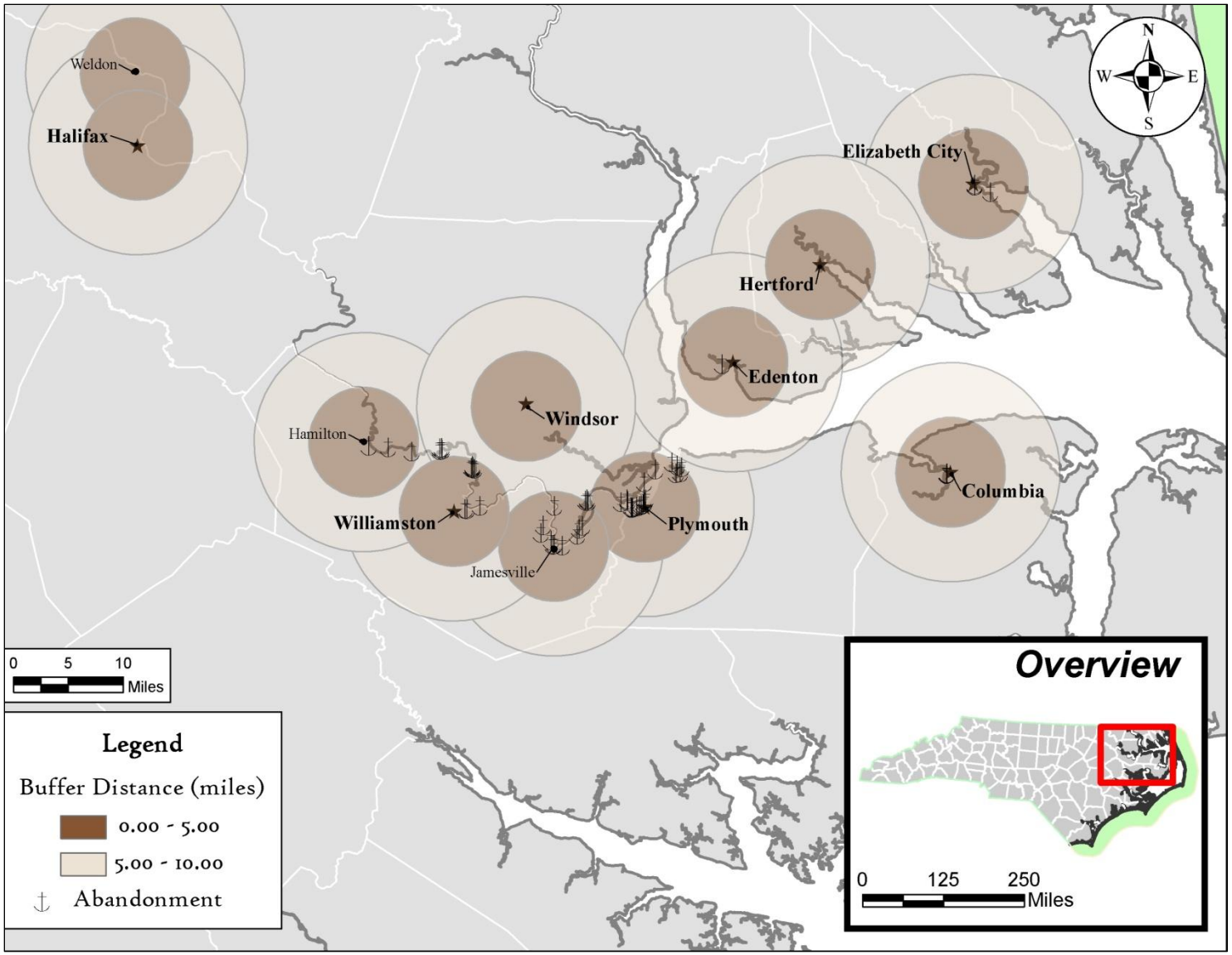

FIGURE 37. A map showing all of the abandoned vessels included in the ASCLD with approximate loss locations known, n=57. (Map by author, 2010.)

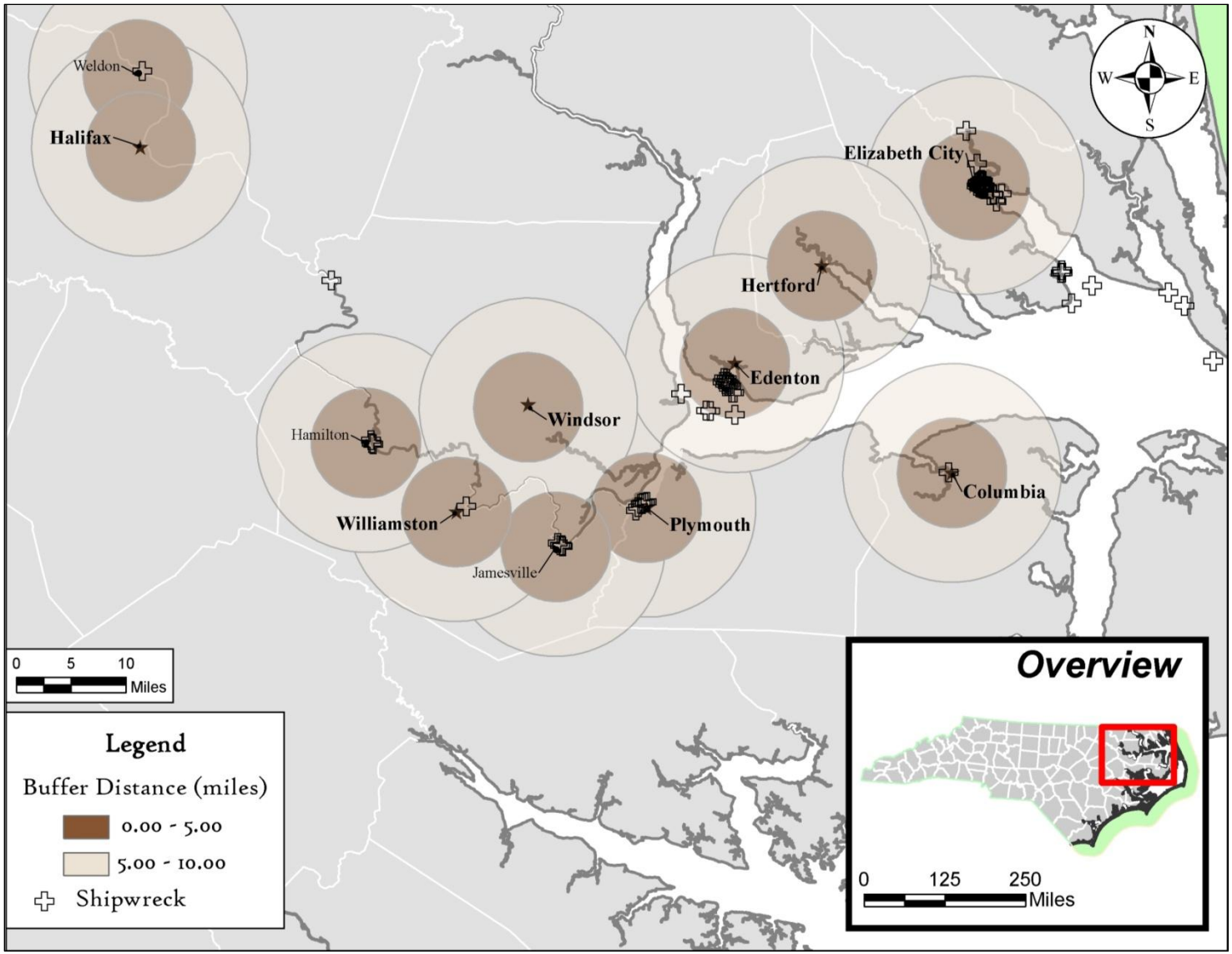

Figure 38. Map displaying shipwrecks recorded in the Albemarle Sound region with approximate locations known, n=75. (Map by author, 2010.)

Shipwrecks at sea or away from settled areas might be noted in newspapers as well, but locational information becomes more difficult to obtain, hence the large percentage of "Unknown Location" vessels on later maps.

The third category of vessel loss is "Unknown Cause". Many of these vessels have been found archaeologically but have not yet been established. Therefore, there is little these vessels can contribute to this particular analysis.

The following sections will examine each waterway individually. These small, regional studies will allow for analyses that lend further support to the order assigned to the individual Central Places in earlier chapters.

Pasquotank River

The most significant cluster of vessels recorded in the Pasquotank River occurs near Elizabeth City, where few precise locations are known but all were recorded near or in the harbor (Figure 39). Several smaller clusters (or single incidents) represent significant historic events. For example, the cluster of four vessels found in the southern region of Figure 39 surrounds Cobb Point and mark the Cobb Point Battery used during the Civil War. On 10 February 1862, *Fanny,* a converted barge, ran ashore and burned. *Sea Bird,* a Confederate vessel, was rammed and eventually sank by *Commodore Perry*. *Black Warrior*, also a Confederate vessel, was deliberately set on fire and sunk in order to avoid Union capture. This was a common form of wartime abandonment in the Albemarle Sound region. The previous day, 9 February 1862, *Ellis*, the unknown loss vessel represented on the map, was captured by the Union Navy (Parker 1883; Government Printing Office 1897).

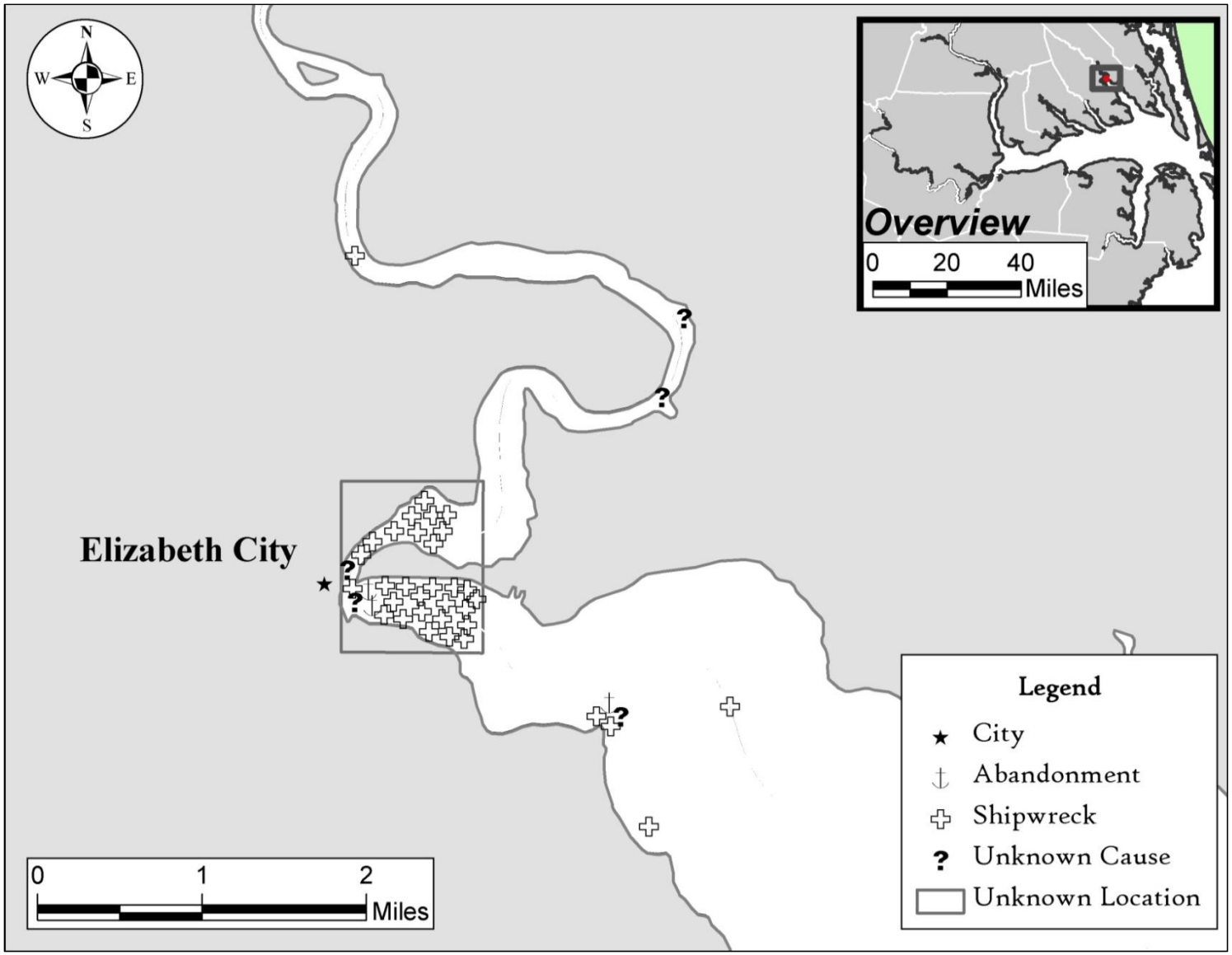

FIGURE 39. Map displaying the vessel losses near Elizabeth City, on the Pasquotank River, n=42. (Map by author, 2010.)

The northernmost unknown loss site, Sawyer's Creek Wreck, may represent a significant historic event as well. The site is located at the mouth of Sawyer's Creek where it was documented that vessels were sunk to create an obstruction during the Civil War. Divers from the UAB explored the wreck and discovered a large collection of stones in the hold, likely indicating that the schooner was part of the obstruction efforts. No other vessels were discovered at that time, though the historical record mentions several more vessels in the area (NC Division of Historical Resources 2004:157).

Of the numerous vessels shipwrecked in the waters off Elizabeth City, many sank due to weather. Unknown Vessel Cluster 1 and 2, a total of 16 vessels, all sank in storms. *Acommac* (1862) was lost in war and *Virginia* (1912) burned at the wharf. Along with the shipwrecks, two vessels were abandoned and two vessels have unknown causes of loss. These findings are consistent with those made by Kenderdine (1994), Price (2006), and Friedman (2008) where clusters of shipwrecks and abandonments occurred near population centers.

Perquimans River

Four vessels were recorded in the Perquimans River, *Republican* (1850) and three unidentified barges (Figure 40). The barges were found during a field survey in 2004, but *Republican* (1850) is known only through historical documentation (NC Division of Historical Resources 2004; Archaeological Site File, *Republican*). The comparatively low number of vessels is representative of the status of Hertford as a Central Place of Lower Order. Hertford never reached the status of an official port of entry, remaining for local use with little commercial activity. Nor did the Perquimans River see improvements such as a canal. It therefore stands to reason the vessel loss count would be low, even with an upper river fitting the model for a high potential for abandonments.

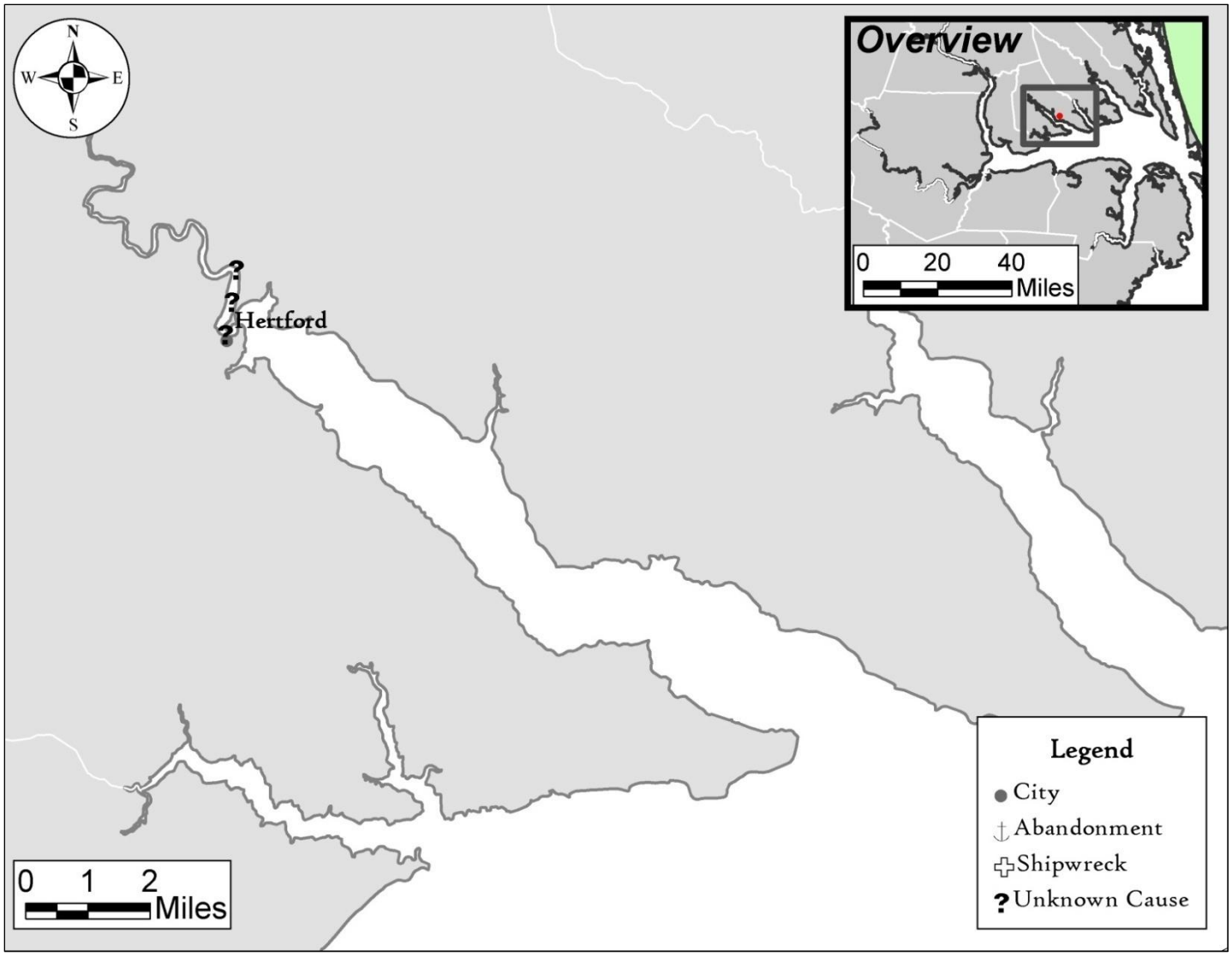

FIGURE 40. A map displaying the vessels lost on the Perquimans River with approximate locations known, n=3. (Map by author, 2010.)

As discussed in Chapter Three, the Perquimans River was surveyed using both a side-scan sonar and magnetometer in 2006 and 2007. Special attention was paid to upper river areas with the expectation of finding watercraft. This, again, was hypothesized based on the previous findings of Babits et al. (1995:103) and Kenderdine (1994:70). Even with allowance for clearing and dredging, many areas in the river had high potential for vessel deposition. All areas were all clear of remains, including Sutton's Creek which flows to the north from the Perquimans River. It is difficult to draw many conclusions from the fieldwork data due to the methodological issues that were previously discussed.

Edenton Harbor

Edenton is another example of a Central Place with a large assembly of vessel losses within close proximity (Figure 41). Many of the vessel loss causes remain unknown, yet, of the ten with recorded cause of loss, nine of them are shipwrecks. The one abandoned vessel, the Burrough's Site, is located in a secluded area at the mouth of Pembroke Creek, not in the harbor proper. Because this vessel has not been identified, there still remains some question as to whether it was, in fact, abandoned. Five of the nine shipwrecks were destroyed in a storm in 1803. *Unknown Schooner 9* was destroyed by Union troops in the Civil War. Little information has been found concerning the other three shipwrecks; *E.M. Willis* (1925), *Longfield* (1820), and *Rotary* (1882).

There is a lot still unknown about watercraft sites near Edenton. Fewer than half of the vessels have a known cause of loss and only four have a known location. The Burrough's Site is a textbook candidate for a graveyard site- near a major port, but clear of navigable channels (Kenderdine 1994; Richards 2008). However, the remote sensing survey conducted in 2006 recorded no other vessels in that area.

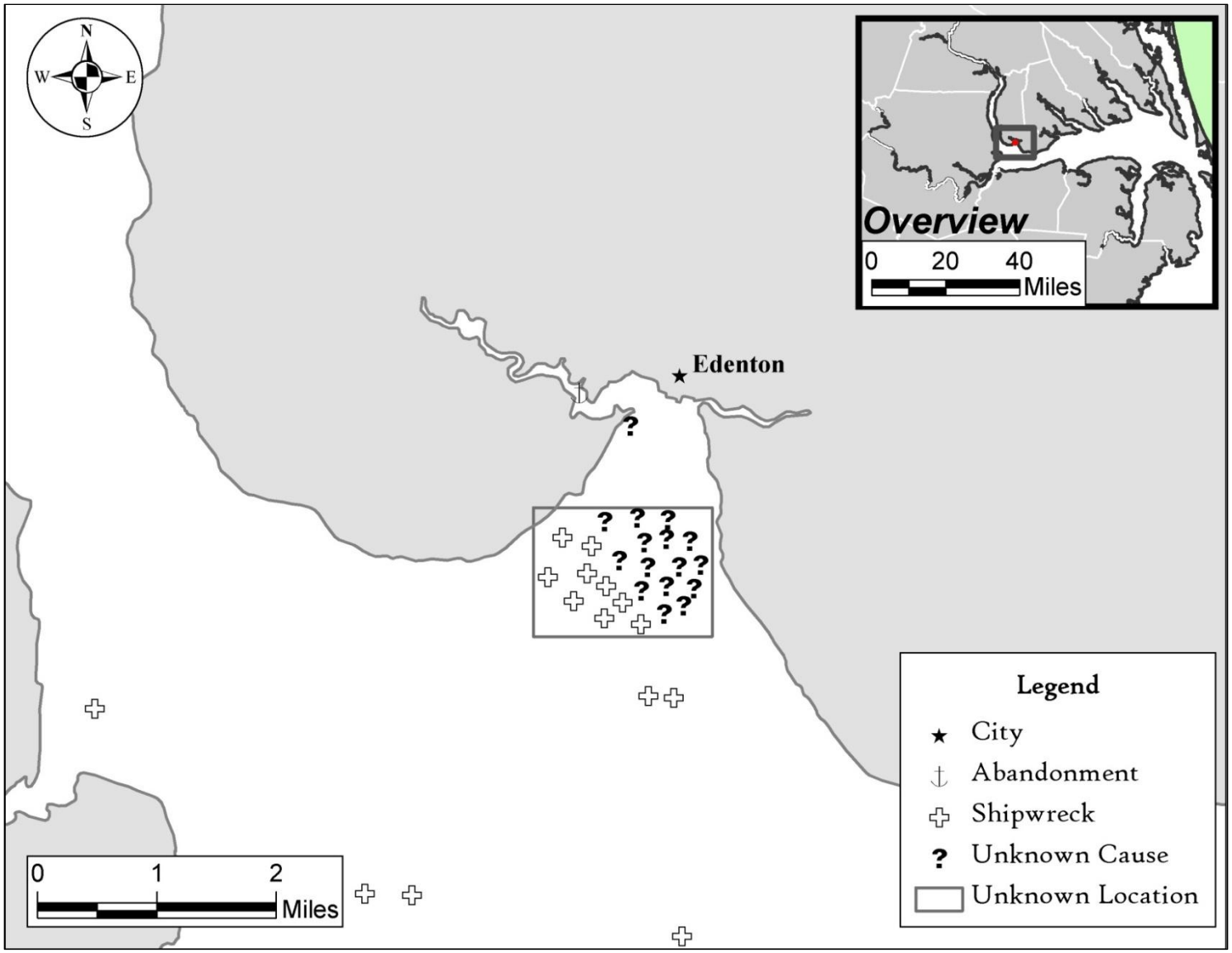

FIGURE 41. Map displaying vessel losses in Edenton Harbor, n=28. (Map by author, 2010).

Chowan River

Research indicates that the Chowan River has a relatively small number of vessel losses and no abandonments (Figure 42). Several vessels have unknown causes of loss, including two vessels near the Virginia border. Of the five shipwrecks recorded, *Olive* (1903) sank due to weather, *Hazard* (1795) ran aground, and *Edenton* (1930), *Greyhounds* (1751), and *Crane* (1929) do not have specified causes of loss. Only *Greyhounds'* (1751) location is known, near the mouth of the river.

The Chowan River's size is comparable to the Roanoke and Pasquotank and so it might be expected to have a similar number of shipwrecks and abandonments. The lack of a major port in North Carolina waters makes that expectation unrealistic. Edenton, a Central Place of Higher Order, located just east of the mouth of the Chowan River is the nearest. Edenton's location, where river navigation is not required to reach it, is the reason it was treated as a separate entity. Without the vessels lost at Edenton, the Chowan River has much lower numbers, more comparable with vessel losses in the Perquimans or Scuppernong Rivers, which also lack a major port. This further demonstrates the influence a Central Place of Higher Order has on the number of watercraft found. Rivers with Central Places of Lower Order, or no port at all, have significantly fewer vessel losses recorded.

Roanoke River

Shipwrecks in the Roanoke River also tend to be located near ports. The exception is *Vesta* (1879), though even it was near a landing when it ran aground (Figure 43). The Roanoke River also has a significant collection of war-related shipwrecks, including CSS *Albemarle* (1864), USS *Bazely* (1864), CSS/USS *Bombshell* (1864), Chainplate Wreck (1864),

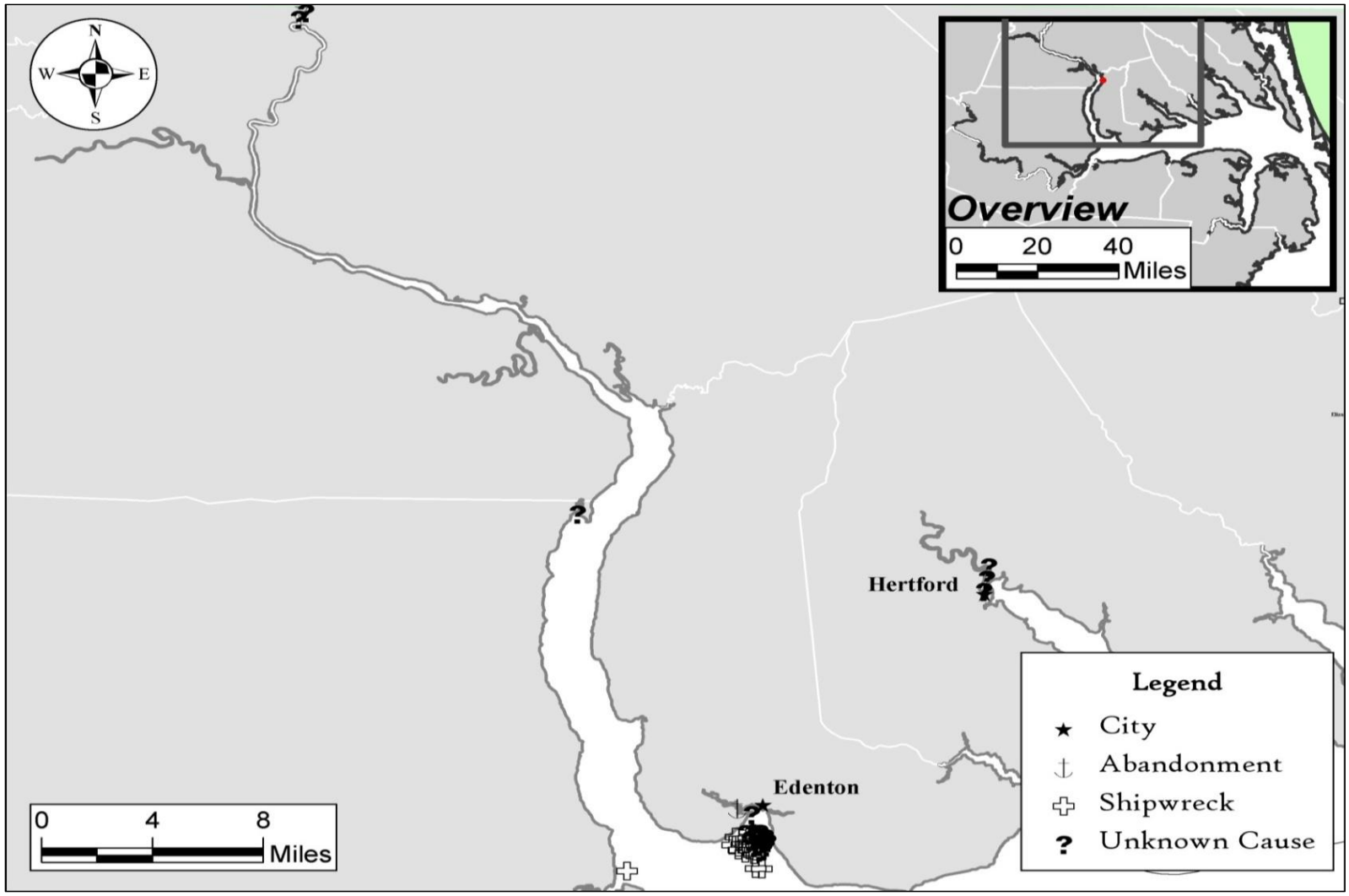

FIGURE 42. A map displaying the vessels lost in the Chowan River with approximate locations known, n=4. (Map by author, 2010.)

Copper Wreck (1864), CSS *Dolly* (1865), Floating Battery (1865), *Light Boat MM* (1864), Mast Wreck (1864), USS *Otsego* (1864), Roanoke River Light Ship (1862), USS *Southfield* (1864), and the Windlass Wreck (1864).

Abandonments are found scattered throughout the river basin (Figure 44). Price suggests that one cluster found near Plymouth may be associated with a plywood and veneer business tarted in 1912 (Price 2006:128). He also observed two distinctive patterns of discard behavior-reflecting wartime and peacetime mindsets. All the vessels abandoned during a time of war had a strategic purpose. The vessels abandoned during peacetime illustrate no distinctive patterns (Price 2006:130-131).

Scuppernong River

Figure 45 shows eight vessel losses in the Scuppernong River; one shipwreck, two lost to unknown causes, and five abandonments. The shipwreck, *Estelle Randall* sank off Columbia in 1898. The vessel *Marguerite* (1933) is known to have been lost in the upper river though the cause is not known. The cause of loss of *Lawrence* (year not known) is not known, nor its location, but it is theorized that the cause was a shipwreck. The possibility of it being an abandoned vessel cannot be ignored however, especially considering the location. All five known abandonments are located along the southern shores of Columbia.

Columbia never developed much of a complementary region, remaining a Central Place of a Lower Order throughout its history. A lower number of vessels recorded lost in the Scuppernong River is therefore expected. Even with a smaller total than larger rivers, the Scuppernong follows the same models concerning shipwrecks and abandonments, with a majority of the watercraft being located near a port.

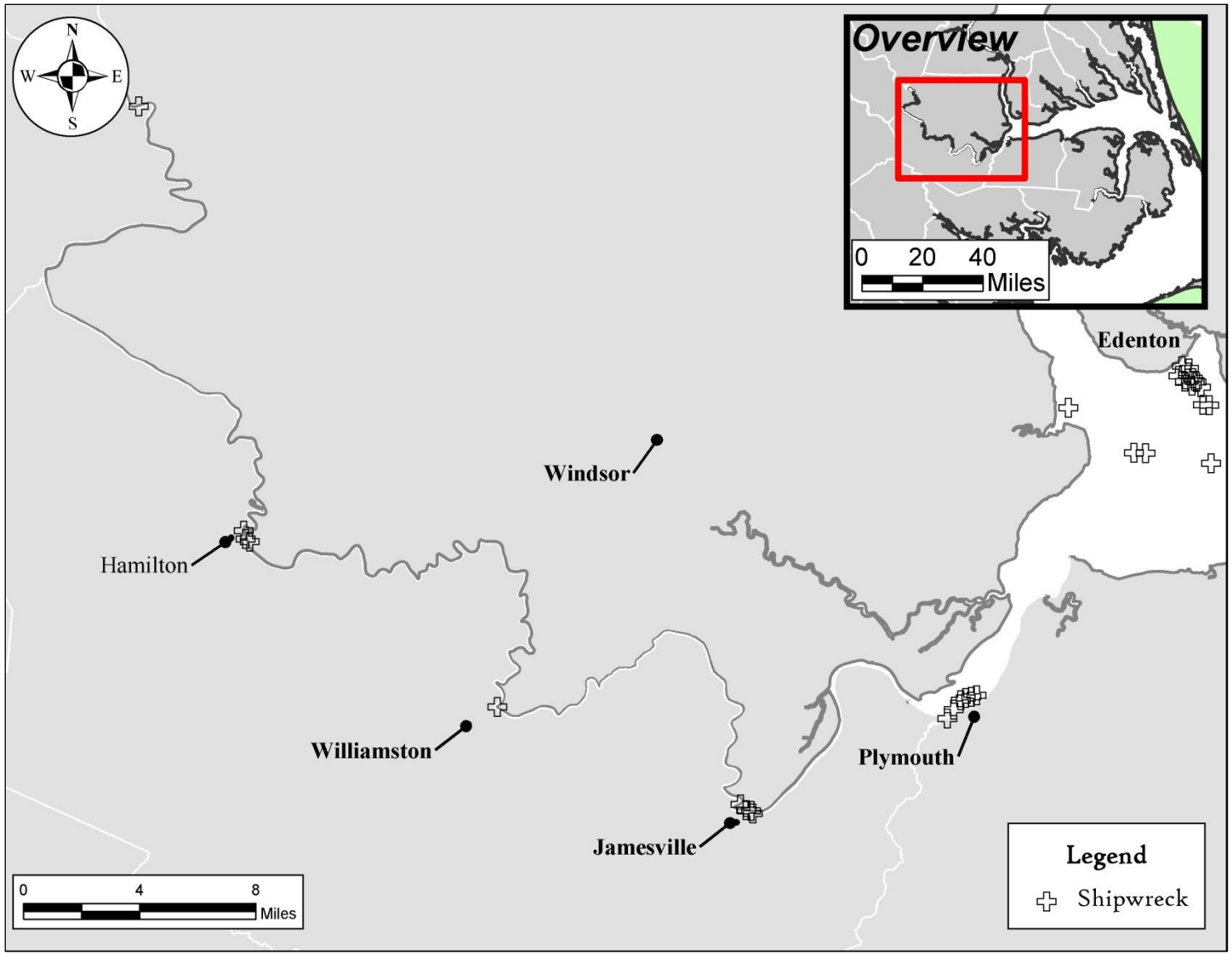

Figure 43. Map displaying the shipwrecks recorded in the Roanoke River, n=26. (Map by author, 2010.)

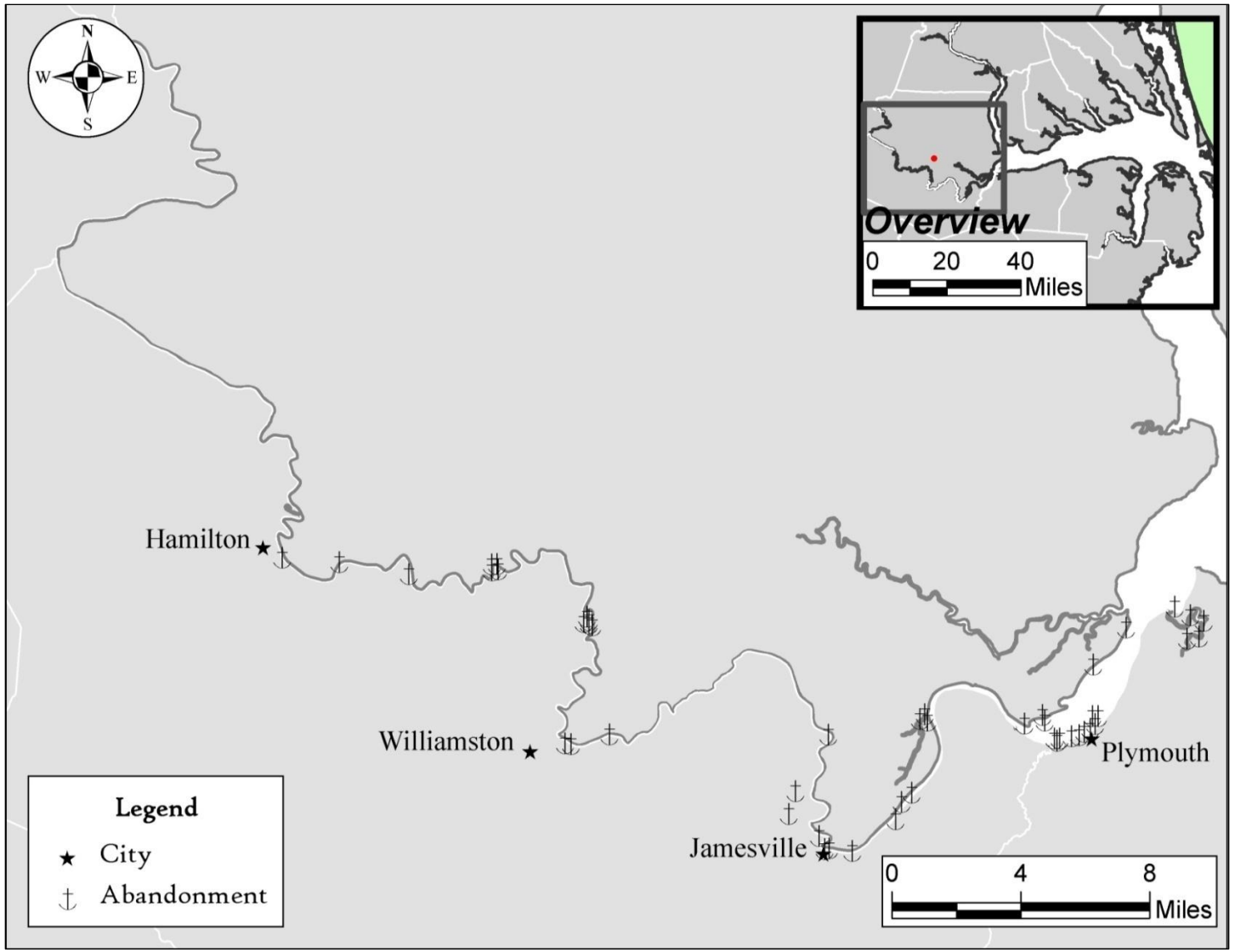

FIGURE 44. A map displaying all abandonments found in the Roanoke River with approximate locations known, n=48. (Map by author, 2010.

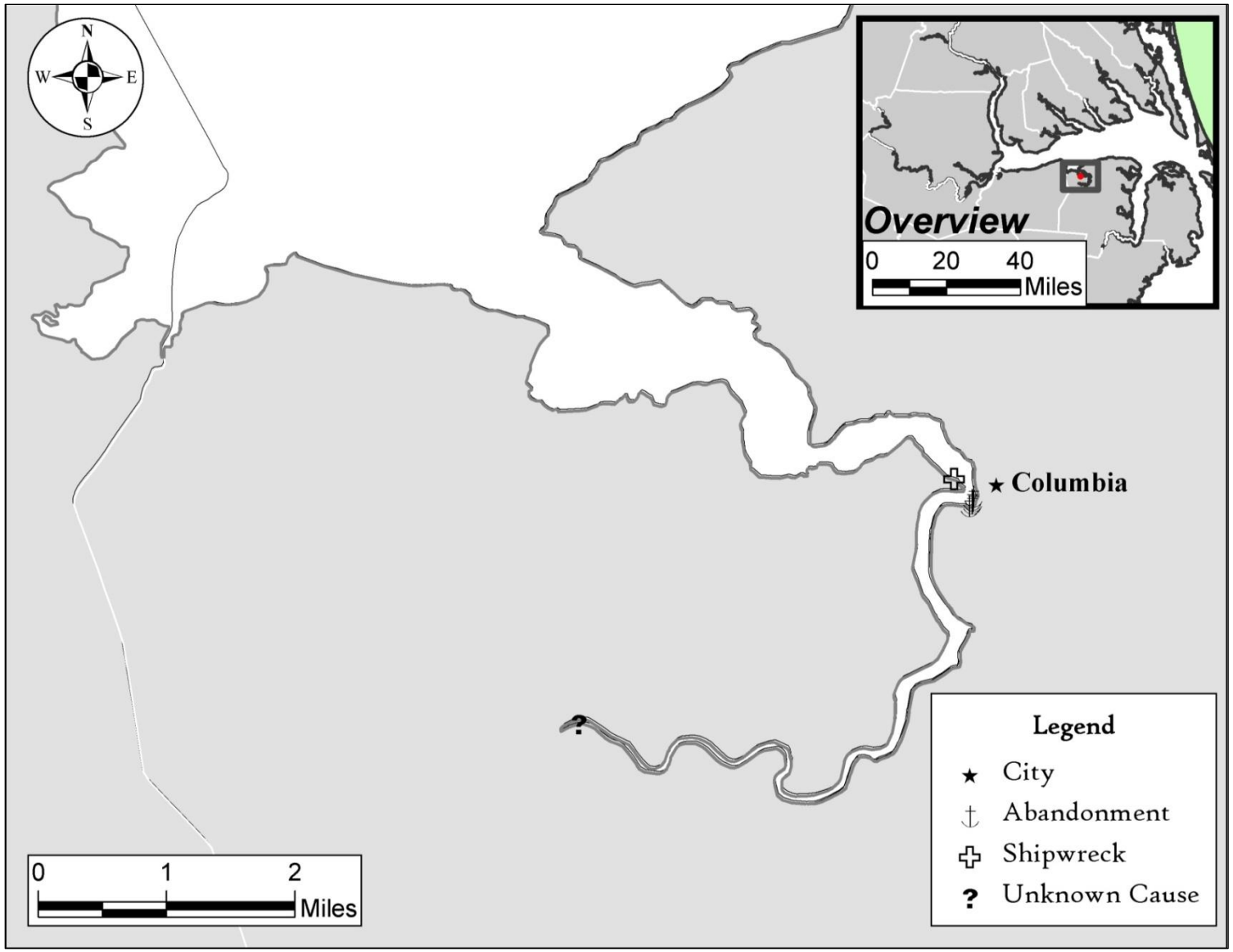

FIGURE 45. Map displaying vessel losses in the Scuppernong River with approximate locations known, n=7. (Map by author, 2010.)

The five abandoned barges can likely be associated with the lumber trade of the Branning Manufacturing Company and the Scuppernong Milling Company during the 20th century. This is consistent with the cluster of vessels found near Plymouth (Price 2008:128) and findings in Australia (Kenderdine 1994:70; Richards 2008:84-86).

Technology

Chapter Five demonstrates the technological trend of longer, larger vessels sailing the Albemarle Sound region from the mid-19th century through the early 20th century. This era corresponds with greater population and number of farms. This chapter will examine where these vessels were sailing, looking for any correspondence to major ports and areas of increasing agricultural and manufacturing production. The shifts in economic importance of the Central Places, known historically, may be mirrored in a shift of vessel size and durability.

Length

The ASCLD has 122 recorded shipwrecks, of which 58 (48%) have a recorded length. The smallest length recorded in the ASCLD is *Maggie Etta* (1889) at 27 ft. The longest vessel is USS *Otsego* (1864) at 230 ft. The mean length is 95.27 ft. Figure 46 displays the shipwrecks broken up into five evenly divided categories. The map shows that the second category (47-92 ft.) and third category (93-138 ft.) vessels dominate. These two categories make up 76% of the vessels with recorded lengths. The second category alone accounts 56%. Most of the larger vessels have no exact known location of loss, but are associated with the Roanoke and Pasquotank Rivers.

Figure 47 takes a closer look at the lengths of vessels in the Pasquotank River. There is one symbol representing the fourth category in the river, representing *Richmond Cedar Works* (1953) which has a length of 181 ft. The vessel foundered, though it is still relatively near the

mouth of the river, where vessel size is less likely to play a role in the wrecking. The two largest symbols represent *Pensacola* (1956) and *Monocracy* (1956), both 200 ft. long. It is not known exactly where these two vessels wrecked, but both incidents were due to fire, events where vessel size was likely not a factor.

Vessels that wrecked in the vicinity of Elizabeth City are almost exclusively second category symbols, representing vessels 47-92 ft. long with the exception of *Virginia* (1912), a vessel of 112 ft (Figure 48). The Pasquotank River, therefore, shows a trend of shipwrecked vessels getting smaller the further up-river they are. Not knowing the true location of *Pensacola* (1956) and *Monocracy* (1956) leaves this claim slightly in question, however Lindsay Smith (2010:135) concludes that both vessels burned to the waterline along the Elizabeth City waterfront. This conclusion falls in line with the trend.

The Roanoke River shows similar findings (Figure 49). Of vessels with known wrecking locations, the largest vessels were all lost near Plymouth, North Carolina. The only exception to this is USS *Otsego* (1864), which made it as far up-river as Jamesville where it became a war casualty. Otherwise, the Roanoke's vessels are noted as being smaller the further up-river they are.

The map makes evident the fact that most vessels are located on either the Pasquotank or Roanoke Rivers, the two rivers with Central Places of Higher Order. The largest vessels are almost exclusively associated with these two rivers, signifying deeper, wider rivers and greater capacity at the ports to meet the demands of larger watercraft.

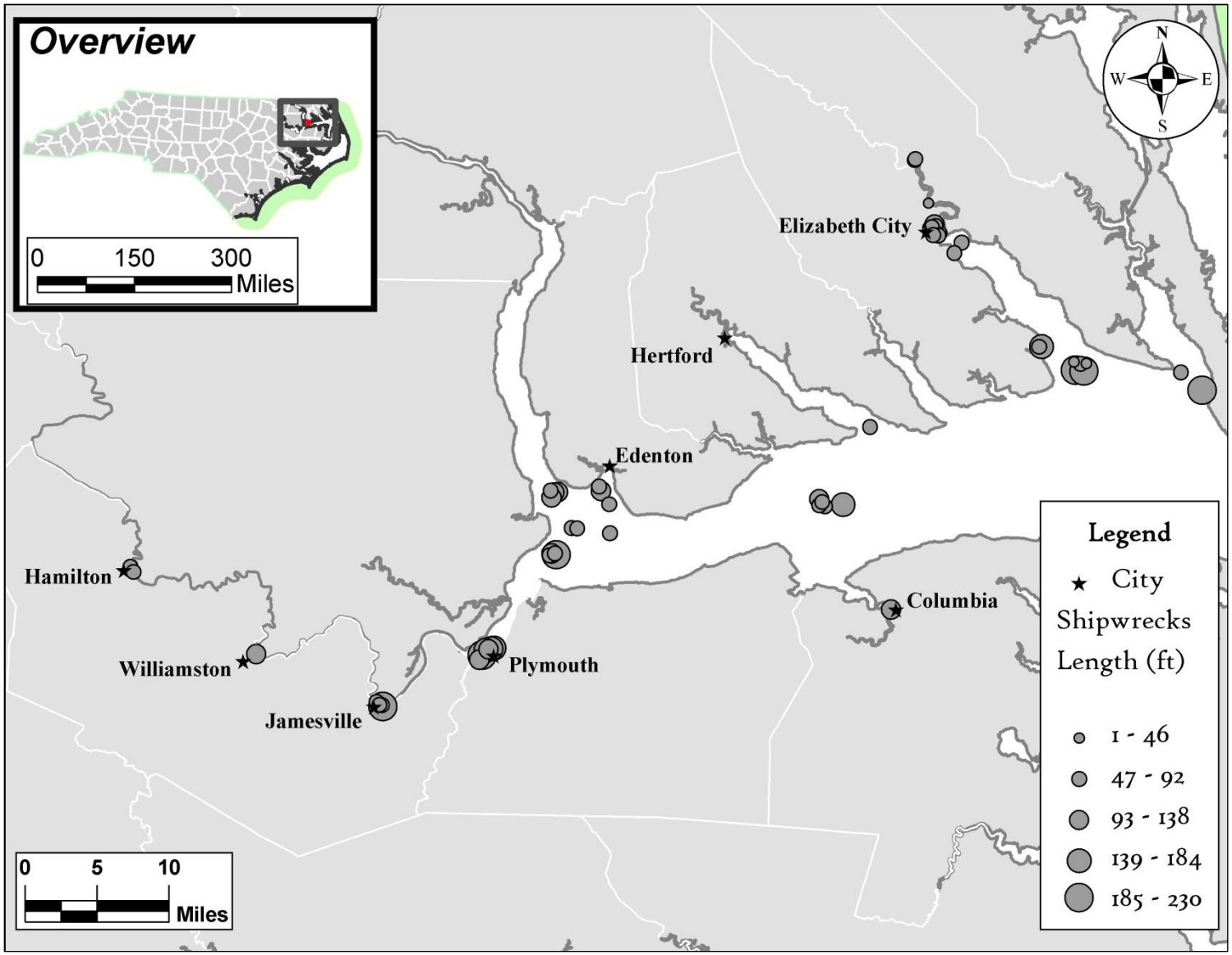

FIGURE 46. Map displaying shipwrecks in the Albemarle Sound region, categorized by length of vessel, n=57. (Map by author, 2010.)

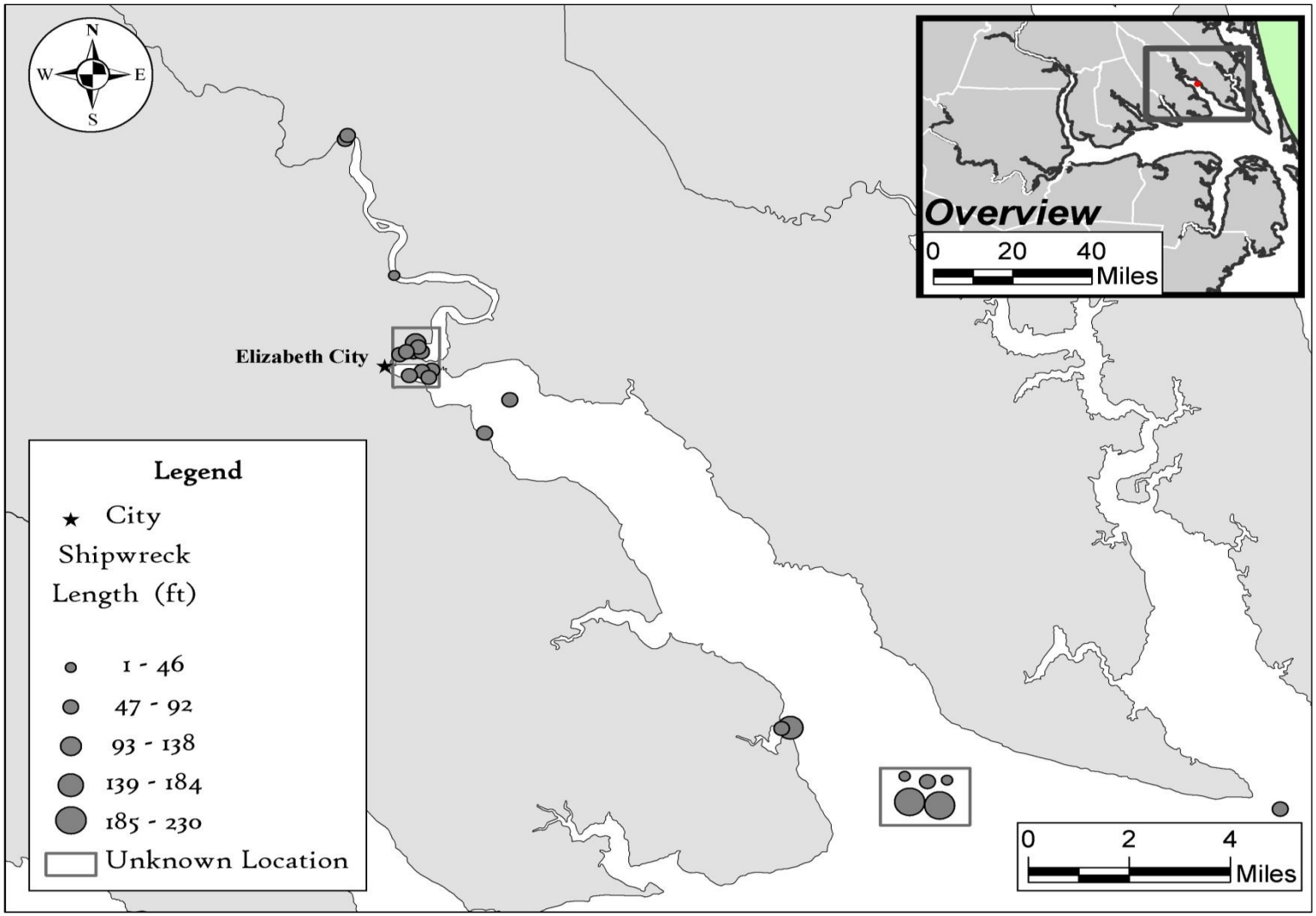

FIGURE 47. A map displaying shipwrecks in the Pasquotank River based on their length, n=22. (Map by author, 2010.)

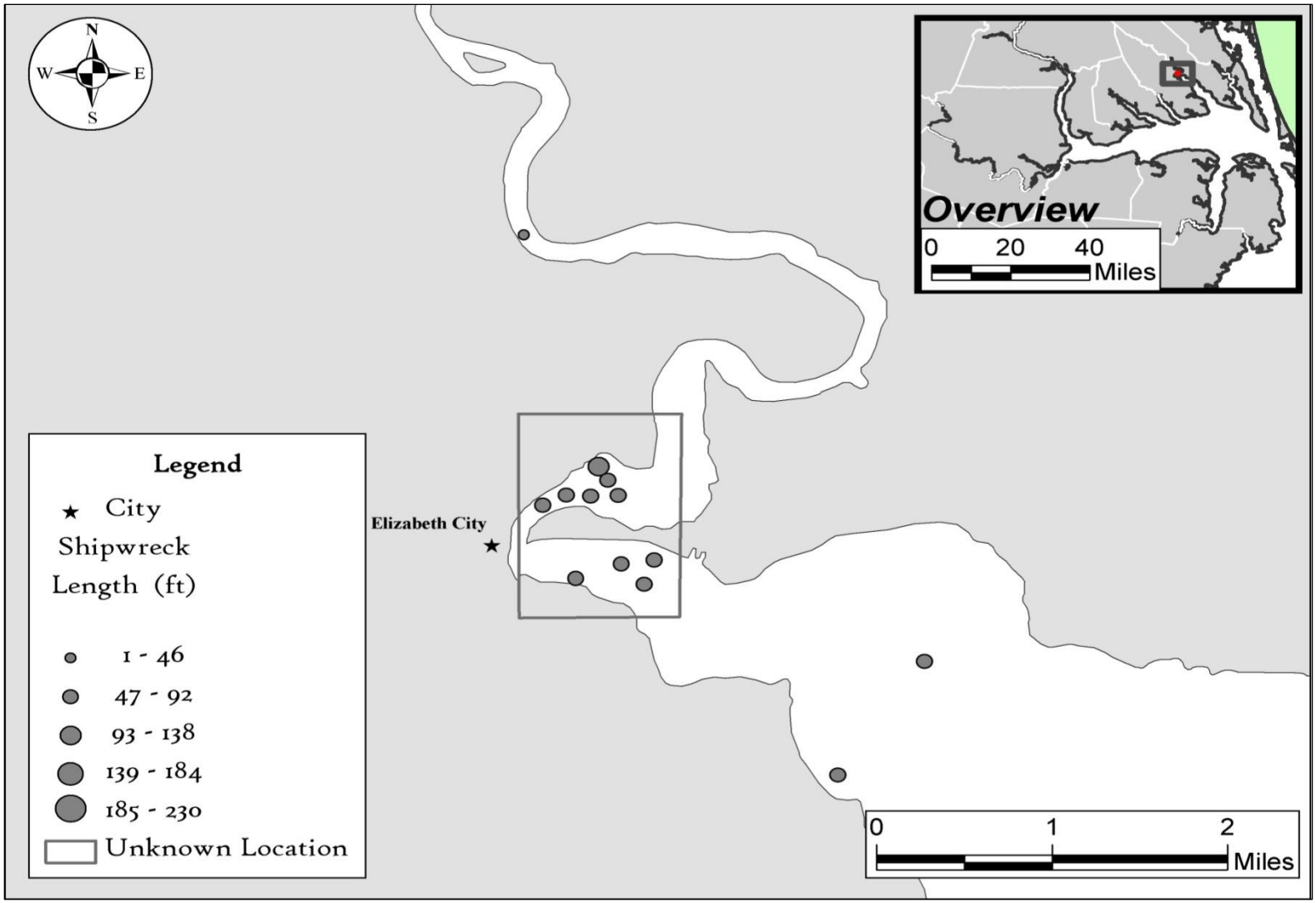

FIGURE 48. A map displaying shipwrecks near Elizabeth City, NC, based on their length, n=13. (Map by author, 2010.)

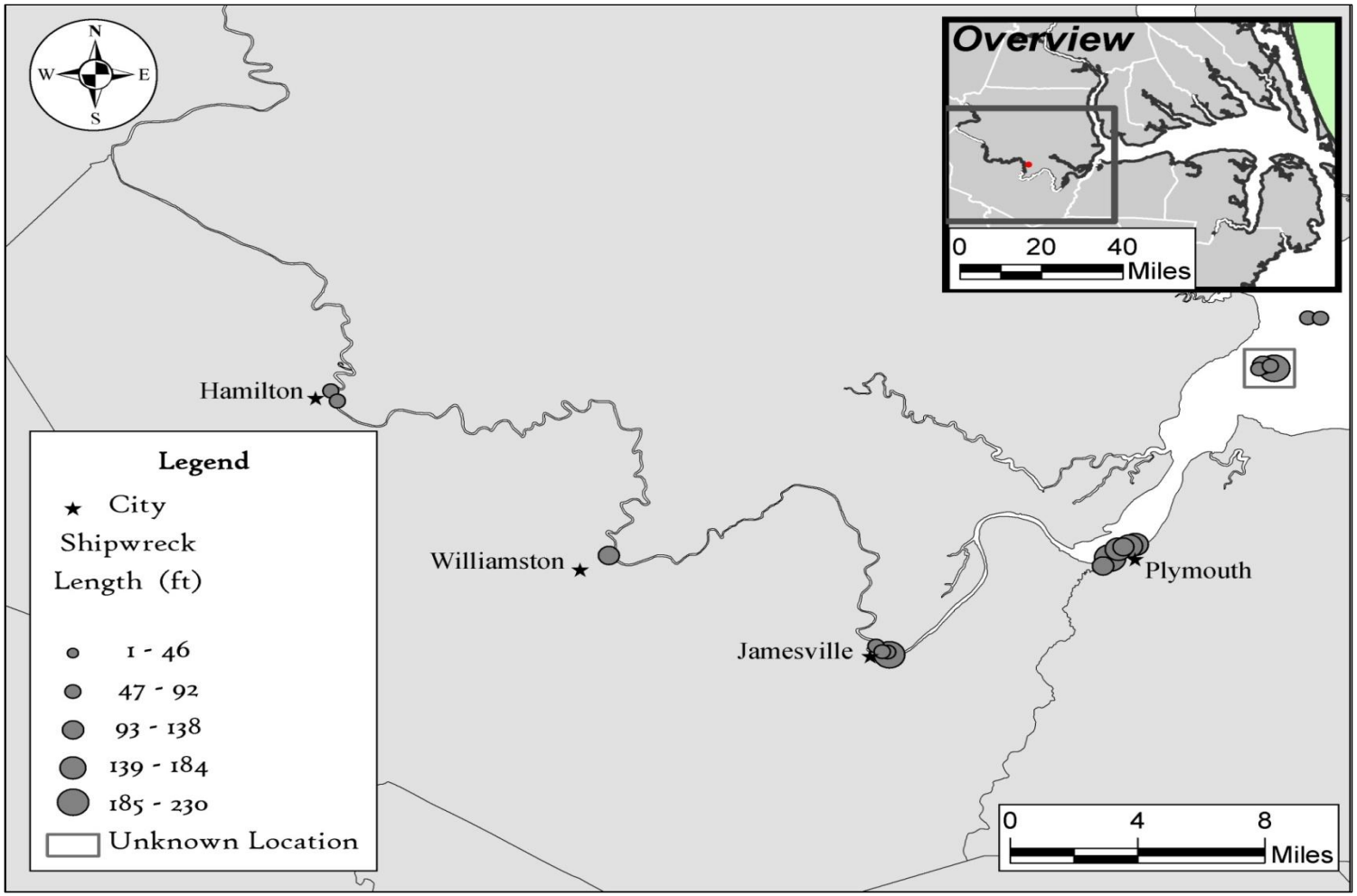

FIGURE 49. A map displaying vessels shipwrecked on the Roanoke River, categorized by length, n=18. (Map by author, 2010.)

The trend of smaller vessels reaching further up river than the largest watercraft is likely indicative of limitations the upper Roanoke River and the Dismal Swamp Canal put on vessel dimensions. It also suggests that a diversity of vessels visited Plymouth and Elizabeth City, but vessels of a more specialized nature traveled on the rivers and canal.

Depth

The patterns shown in vessel depth are similar to those outlined in the discussion on vessel length. Figure 50 shows the shipwrecks in the project area, categorized by vessel depth. The map shows that two-thirds of the vessels fall within the second (5-7 ft.) and third (8-10 ft.) categories. The only area that has any vessels from the largest category is the Pasquotank River.

The Pasquotank River shows a much larger diversity of ship draught than any other location in the project area (Figure 51-52). In 1850, the channel of the river reached depths of 10-12 ft. from the mouth to Elizabeth City at which point the harbor reached depths of as deep as 27 ft. (United States Office of Coast Survey, n.d.). Only one vessel greater than seven feet is recorded as having wrecked beyond the mouth of the river, but because that one vessel, *Windsor* (1850), had a length of 17 ft., it seems that this is perhaps coincidence as opposed to any sort of real pattern.

The Roanoke River is fairly deep, the shallowest points of the channel were as deep at 15 ft between the mouth and Jamestown as early as 1864 (United States Office of Coast Survey, n.d.). It shows only one vessel with any great draught, USS *Southfield* (1864), at 12 ft (Figure 53). The trend with the Roanoke River is that vessel draught lessens the further up-river the shipwrecks are.

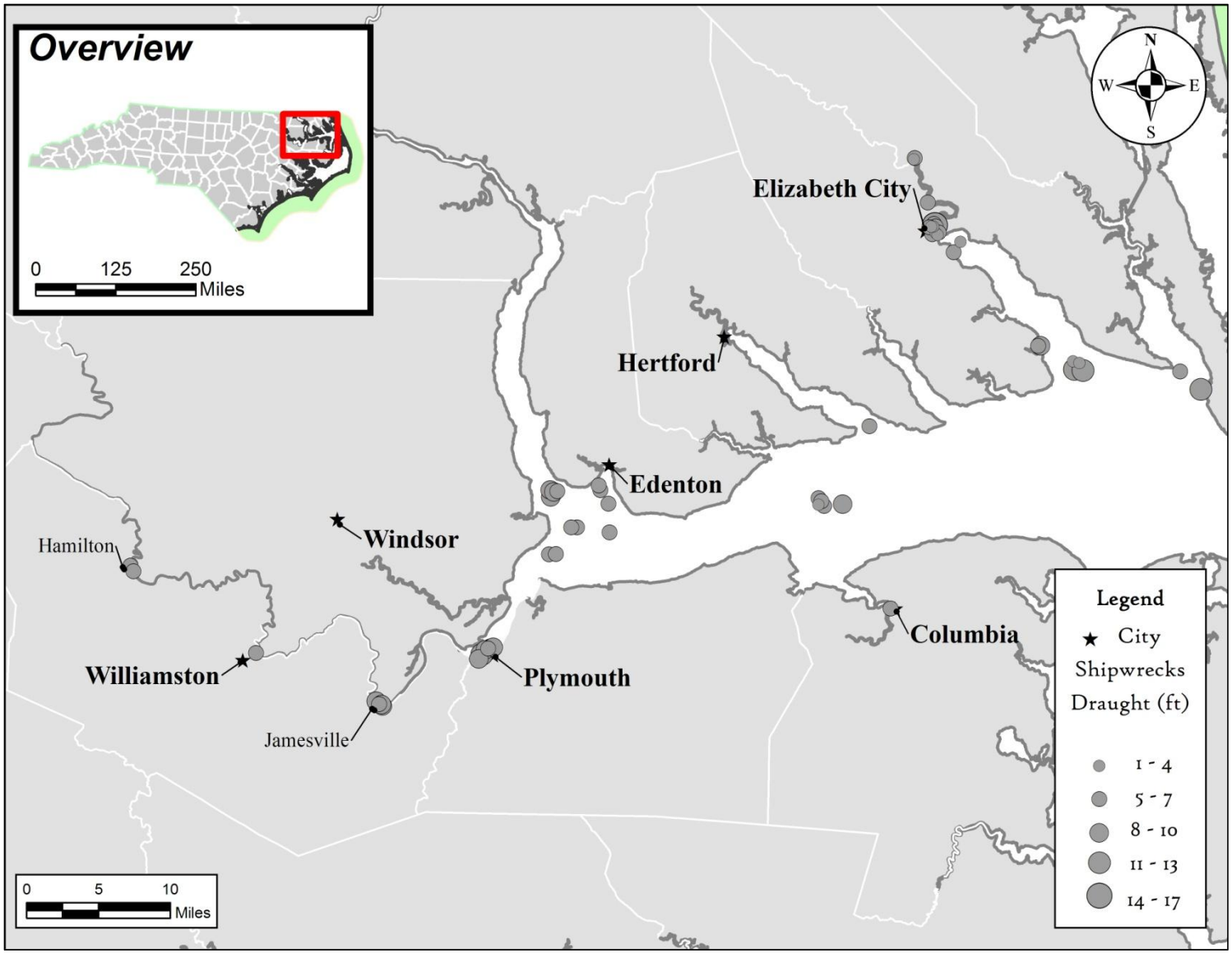

FIGURE 50. Map displaying shipwrecks in the Albemarle Sound region, categorized by draught of vessel, n=92. (Map by author, 2010.)

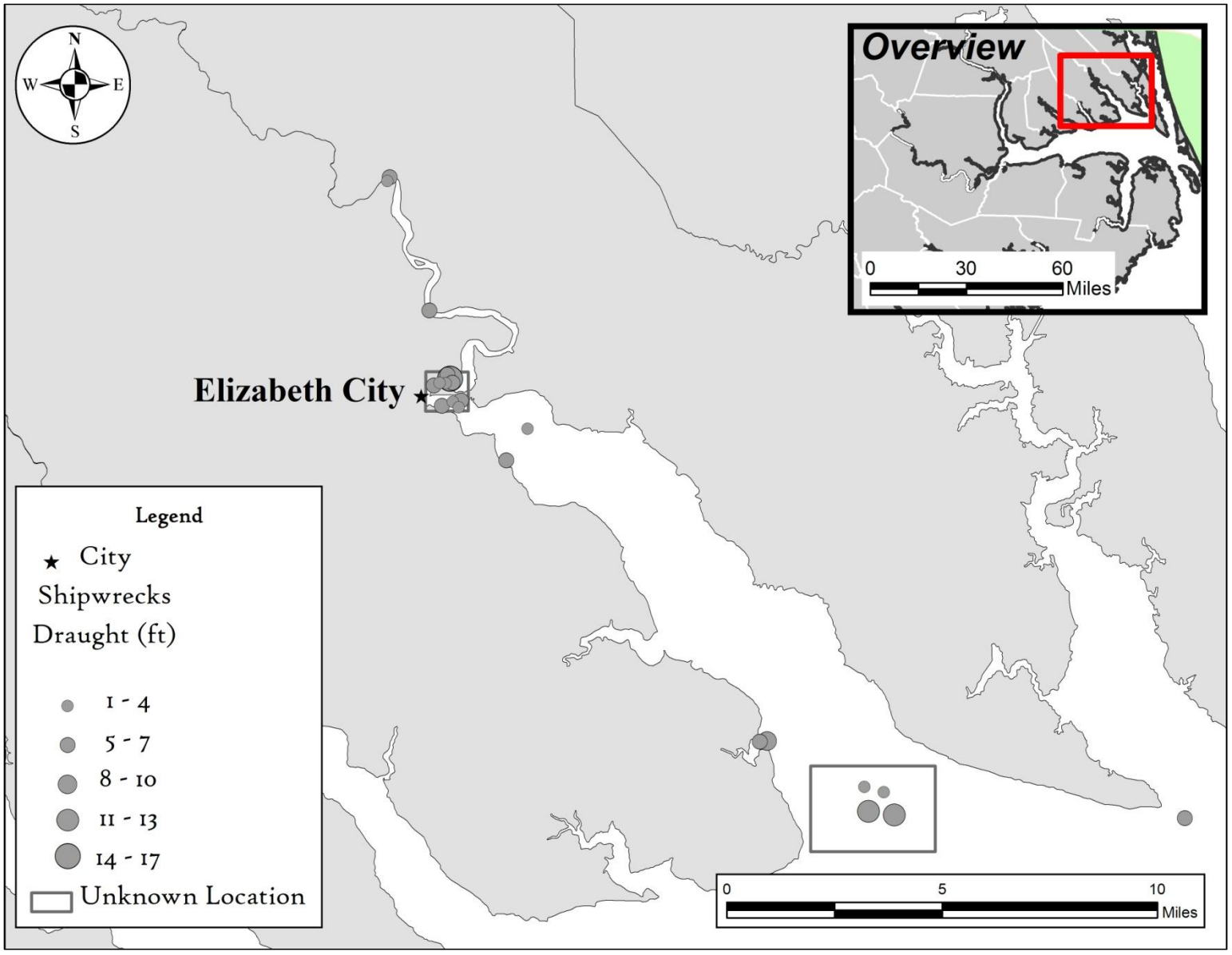

FIGURE 51. A map displaying shipwrecks in the Pasquotank River based on their draught, n=23. (Map by author, 2010.)

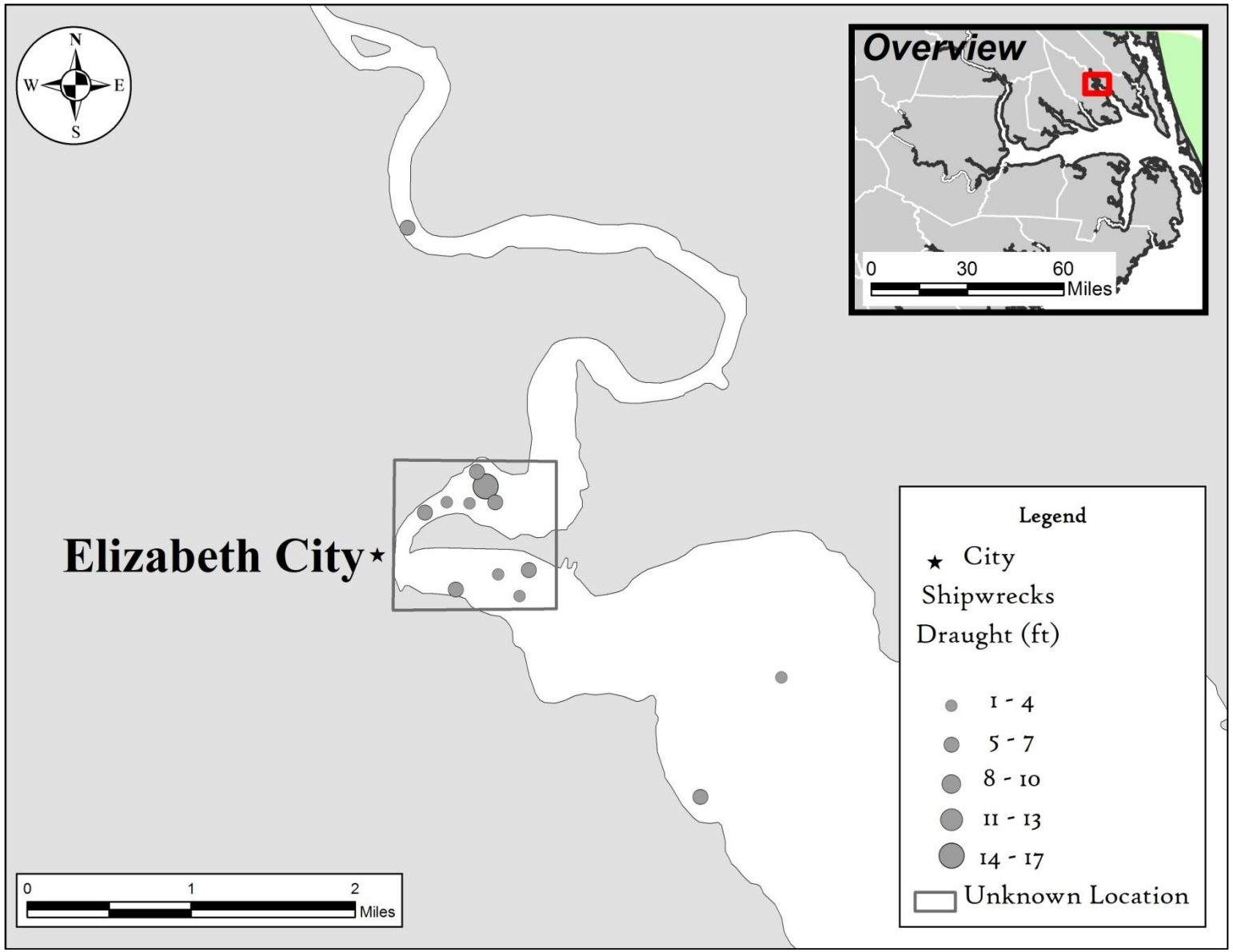

FIGURE 52.A map displaying shipwrecks near Elizabeth City, NC, based on their draught, n=13 (Map by author, 2010.)

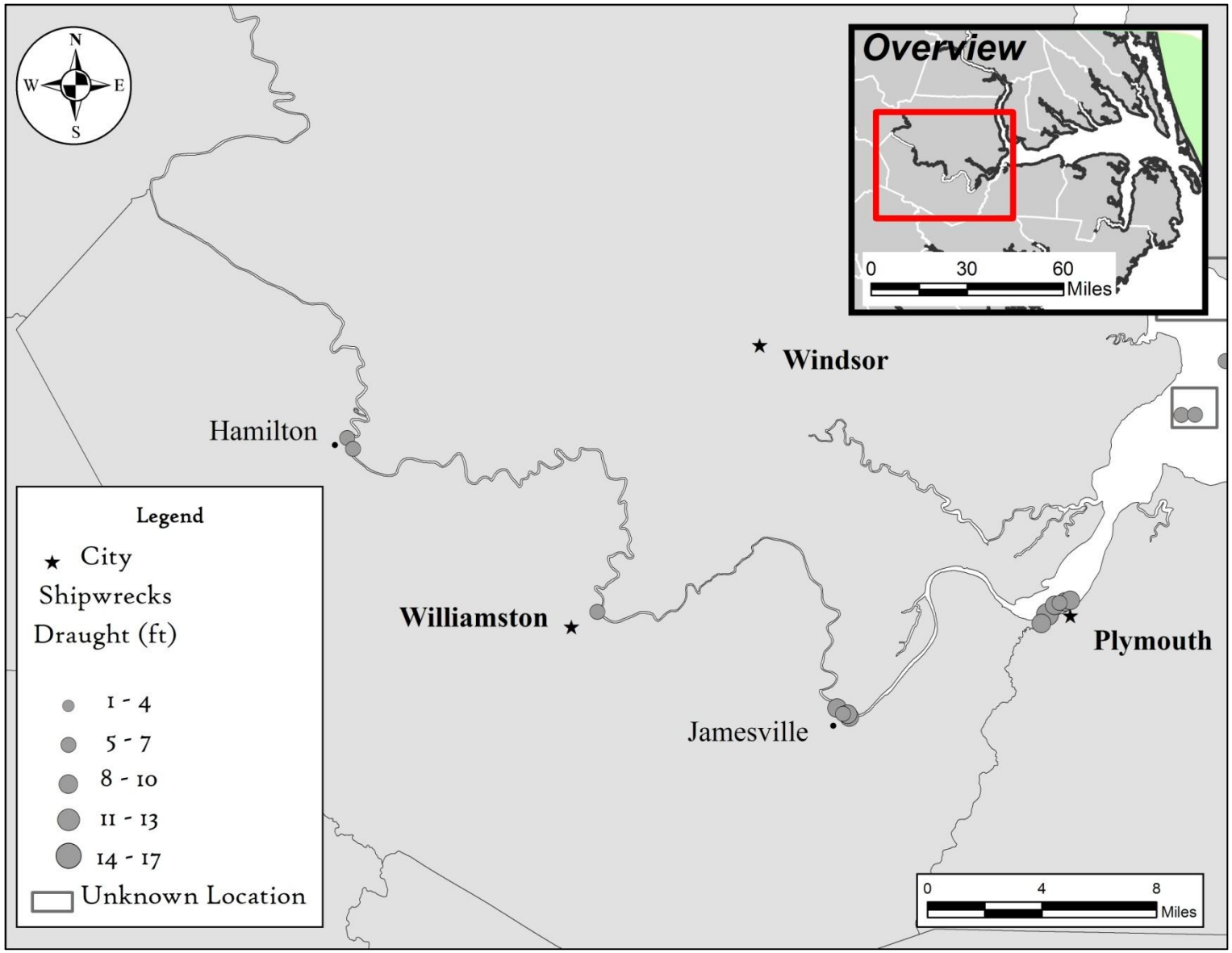

FIGURE 53. A map displaying vessels shipwrecked on the Roanoke River, categorized by draught, n=14. (Map by author, 2010.)

Price recognized that shipwrecks of larger vessels seemed to occur near the towns along the Roanoke River, particularly Plymouth and Jamestown (2006:135-136). His observation demonstrated the importance of these ports as Central Places. The current research continues this pattern and extends it to the Pasquotank River as well. No watercraft with a draught deeper than seven feet is recorded north of Elizabeth City (Pasquotank) or west of Jamesville (Roanoke). Much like the results of the length analysis, analysis of draught supports categorization of Plymouth and Elizabeth City as Central Places of Higher Order.

Lifespan

Figure 54 maps vessel losses based on vessel lifespan. Each waterway appears to contain vessels of varying lifespans, leaving no evidence of a particular trend. It appears that most of the oldest vessels were lost in the Albemarle Sound or Pasquotank River, though their precise locations are not known (Figure 55). The Roanoke River also has vessels from every category except the very oldest (Figure 56). This closer examination of the Central Places of Higher Order does not indicate any trends either. Consequently, no conclusions can be made based off of the geo-spatial analysis of the vessel lifespan.

Trade

This section is concerned with trade patterns of the Albemarle Sound region. The previous chapter showed that a majority of vessels recorded in the ASCLD were used for transport. The following discussion will attempt to determine geo-spatial patterns based on vessel function, where vessels were built, and the cargoes carried. Together, the topics will bring clarity to the trading trends of the Albemarle Sound region

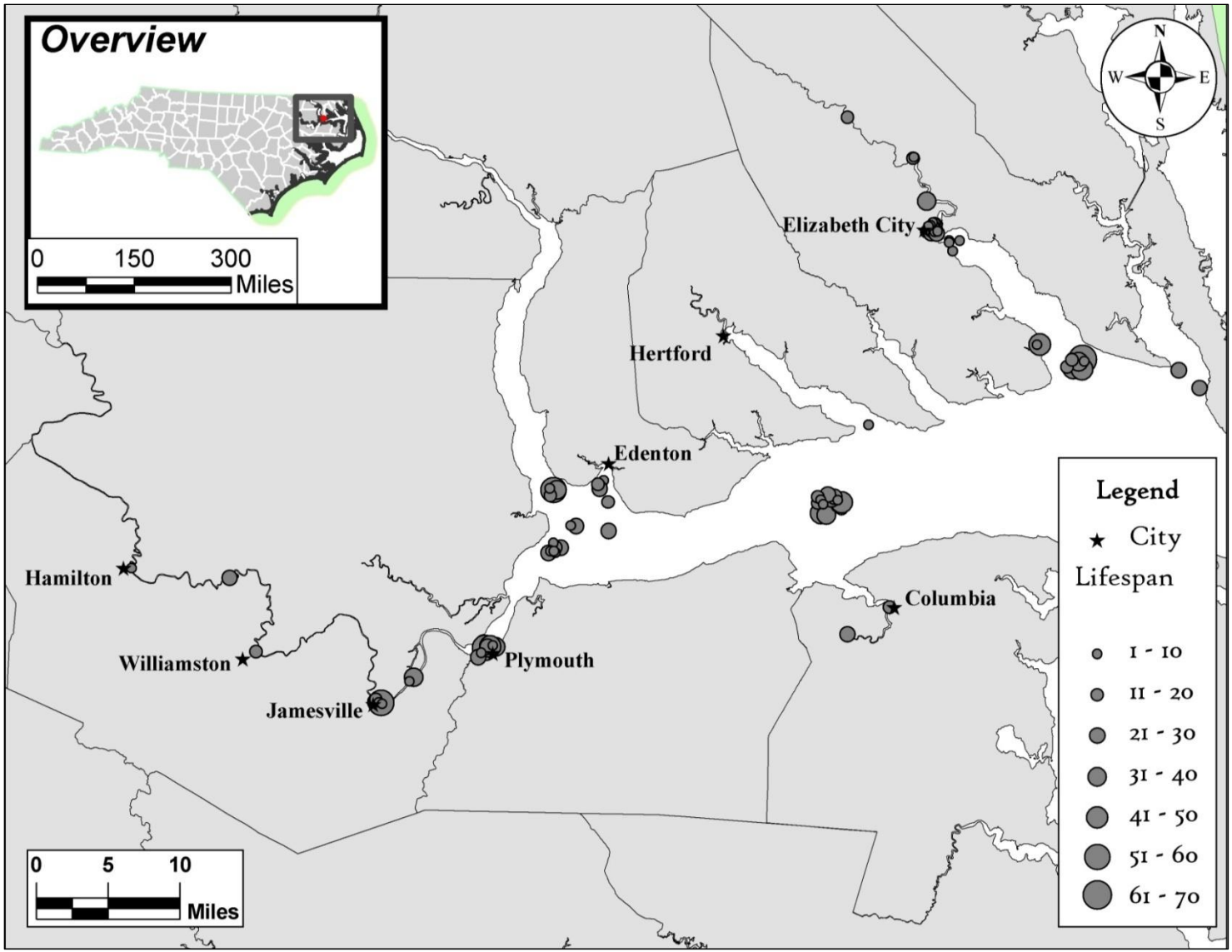

FIGURE 54. A map displaying vessel losses on the Albemarle Sound region, categorized by lifespan, n=83. (Map by author, 2010.)

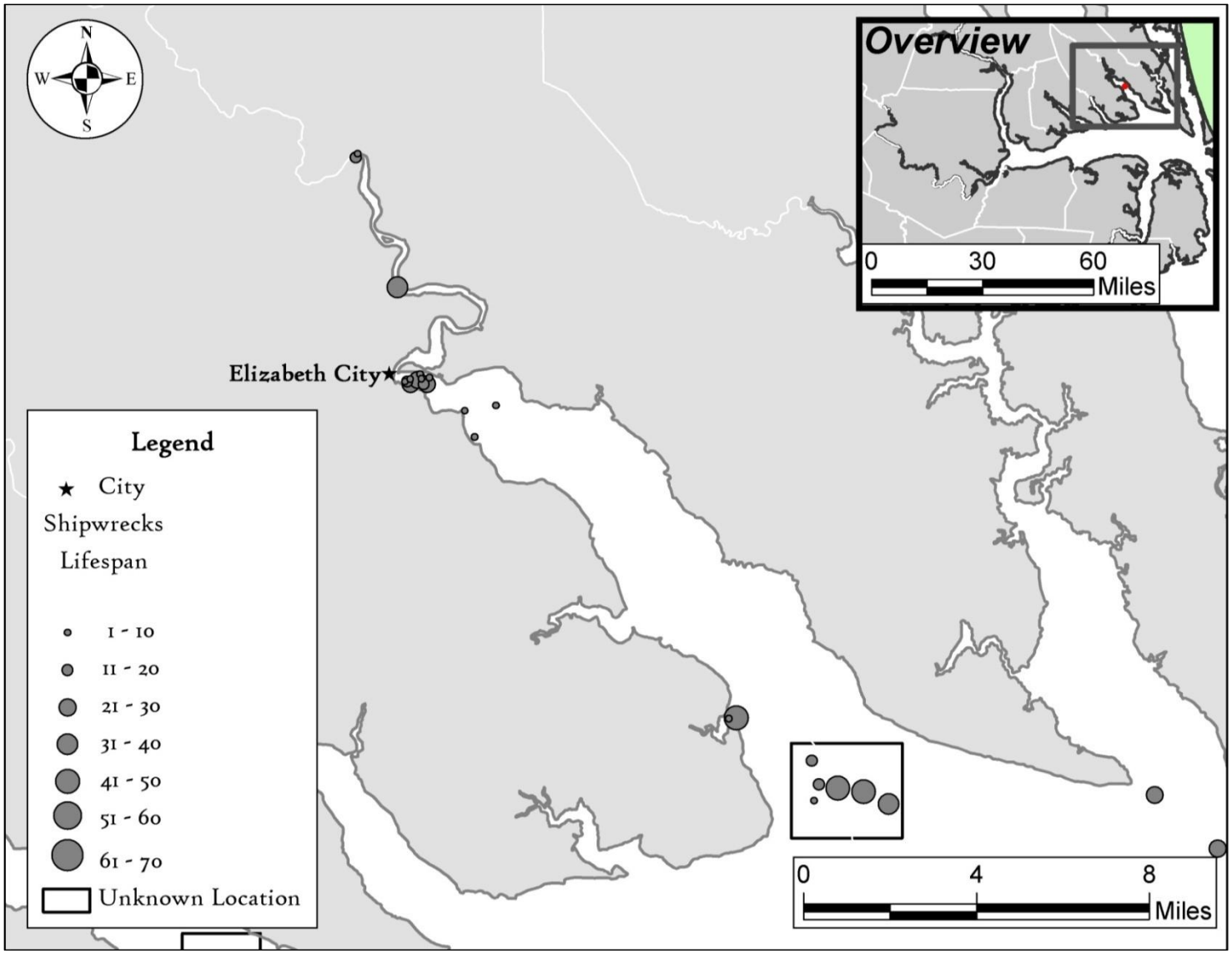

FIGURE 55. A map displaying the vessel losses on the Pasquotank River, categorized by lifespan, n=30. (Map by author, 2010.)

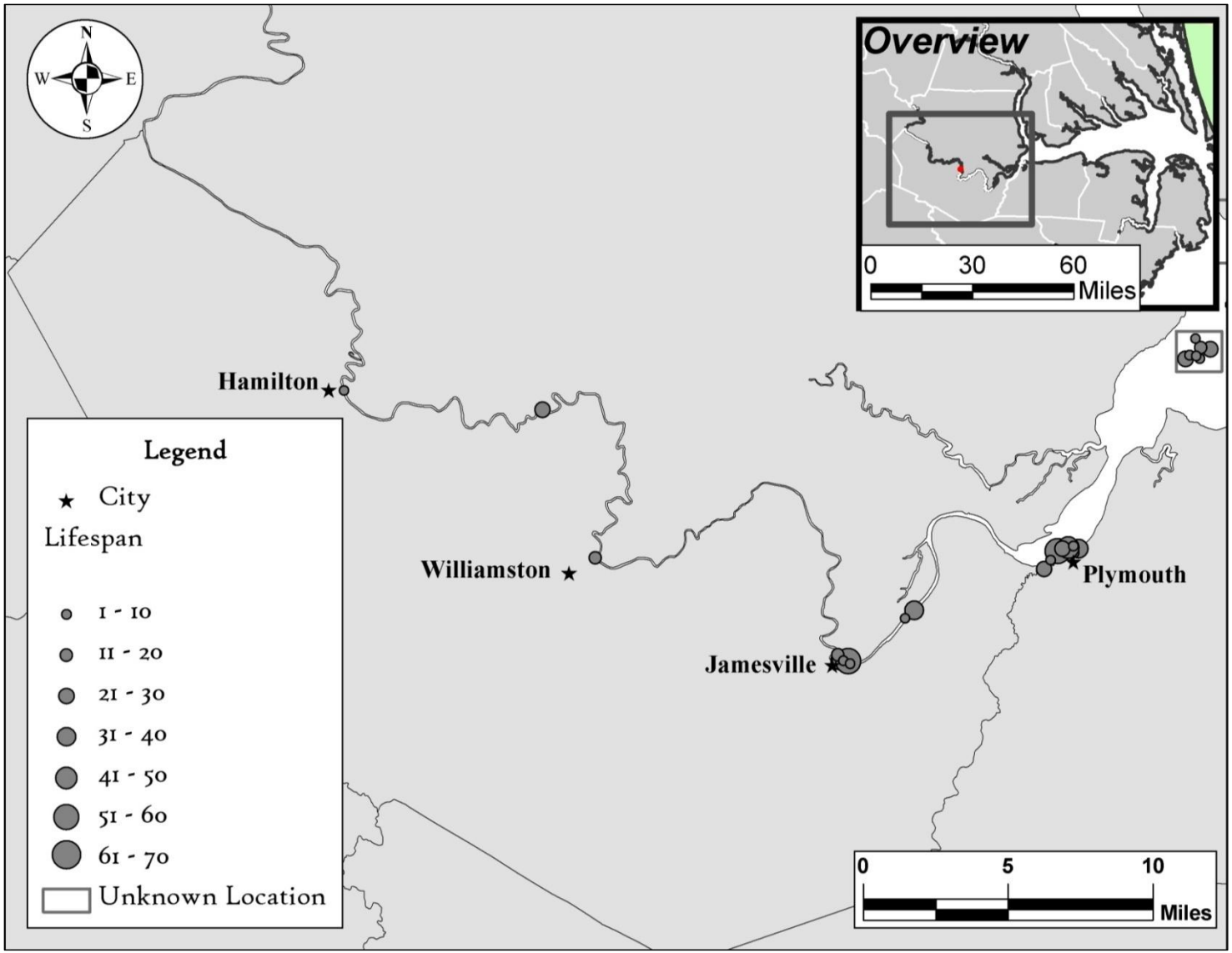

FIGURE 56. A map displaying the vessel losses on the Roanoke River, categorized by lifespan, n=23. (Map by author, 2010.)

Figure 57 displays all vessels in the ASCLD in their geo-spatial location, categorized by function. Transport vessels are found throughout the study area. This is to be expected, knowing that transport vessels make up 37% of the ASCLD assemblage, 68% of the vessels with a known function. War vessels are limited to the Roanoke and Pasquotank Rivers. Based on historical accounts of naval skirmishes in the study area, this would be expected. Support vessels are also found primarily in the Roanoke and Pasquotank Rivers, with the exception of *Kaye C. Green* (1998), a support vessel with an unknown cause of loss in Albemarle Sound and *Ada* (1892), a support vessel lost at Edenton.

A closer look at vessel function in the Pasquotank River shows that losses due to war are all found in the vicinity of Elizabeth City (Figure 58-59). Their actions in defending the city are well documented (Creecy 1954; Dixon 1954; Merrill 1954). There are several support vessels, *Weona* (1929) and *Partridge* (1918), lost in the river as well, likely associated with the Dismal Swamp Canal. It is safe to assume that many "Unknown Function" vessels played roles in transport, considering they were lost at or near the port of Elizabeth City. The Roanoke River shows a scenario similar to the Pasquotank River in which most vessels fall into the transport or unknown categories (Figure 60). One significant difference between the two rivers is the dispersal of warfare losses. While the Pasquotank war losses center on Elizabeth City, war losses in the Roanoke are spread out.

Figure 61 displays vessel losses categorized by the state of their home port. As previously discussed in Chapter Five, based on the archaeological record the Albemarle Sound region appears to deal with northern regions almost exclusively.

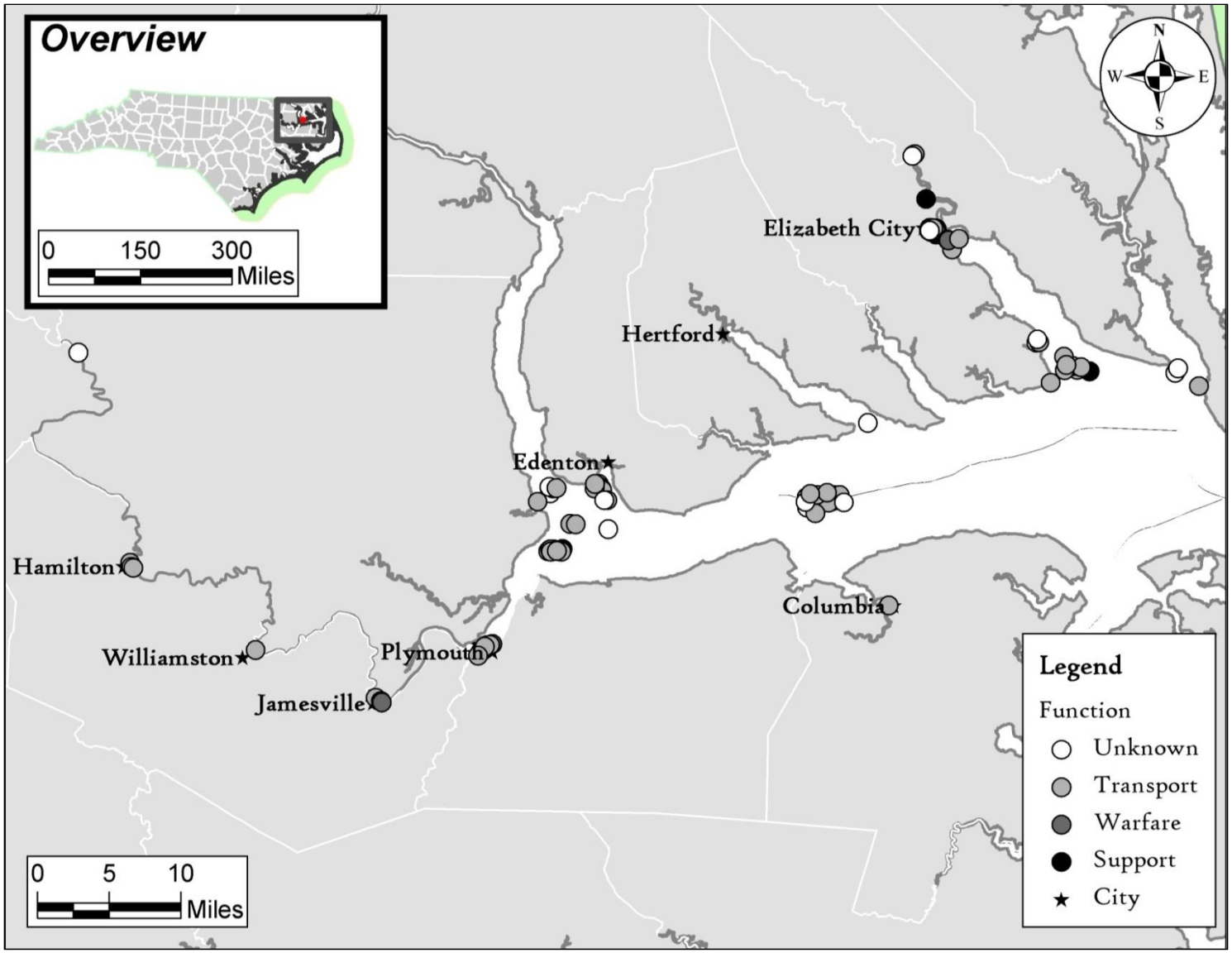

FIGURE 57. A map displaying the function of vessels lost in the Albemarle Sound region, n=249. (Map by author, 2010.)

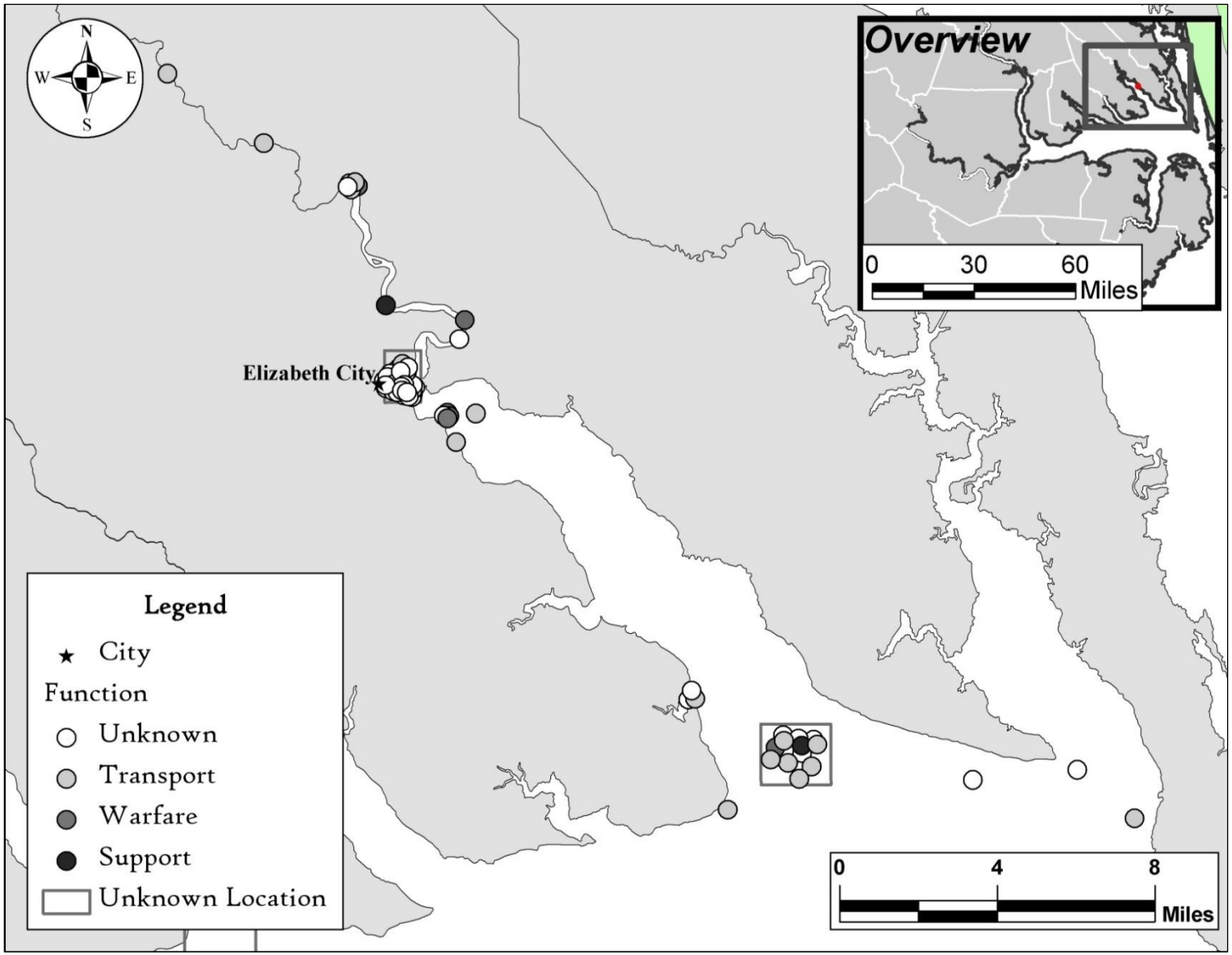

FIGURE 58. A map displaying the function of vessels lost in the Pasquotank River, n=63. (Map by author, 2010.)

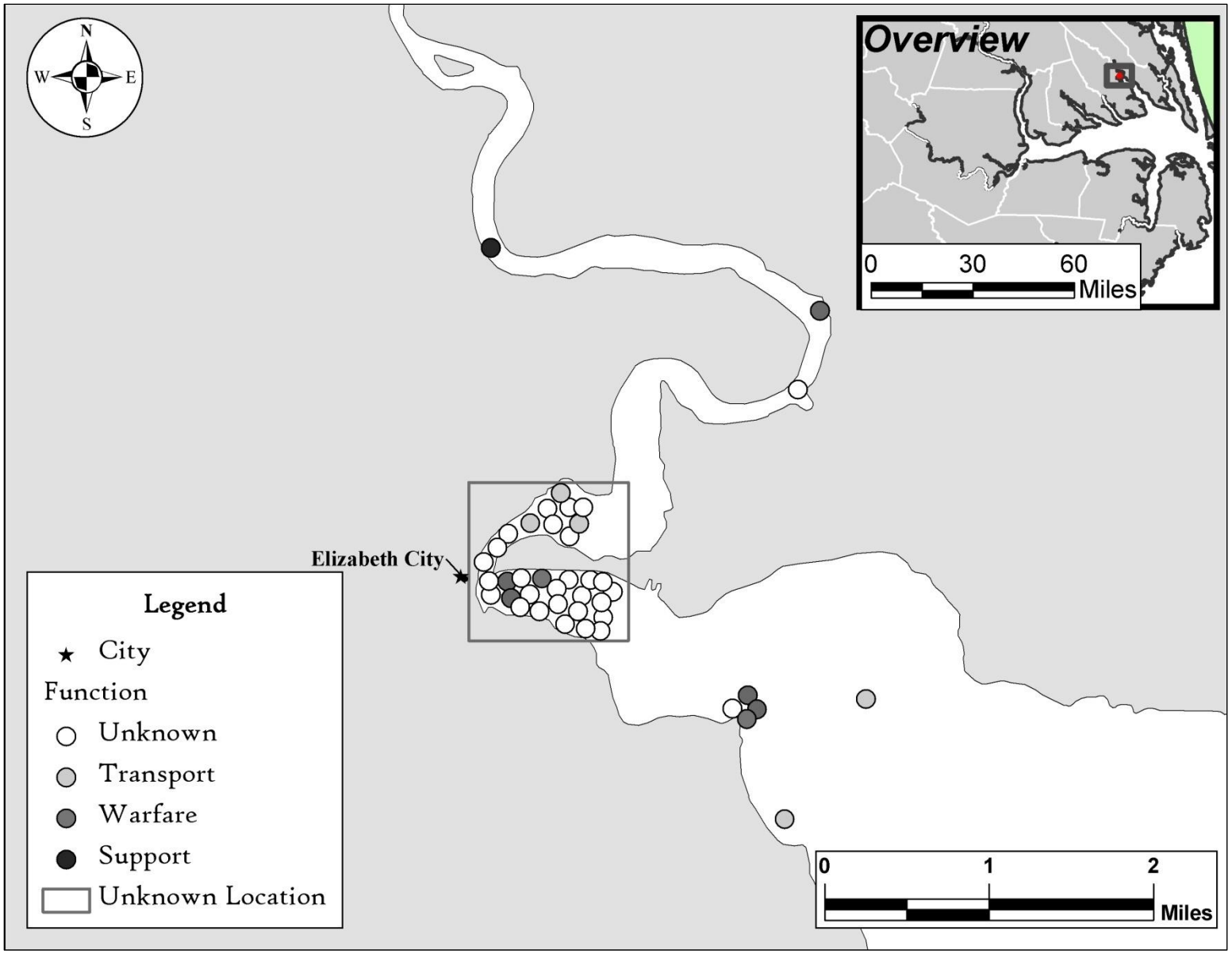

FIGURE 59. A map displaying shipwrecks near Elizabeth City, NC, based on their function, n=44. (Map by author, 2010.)

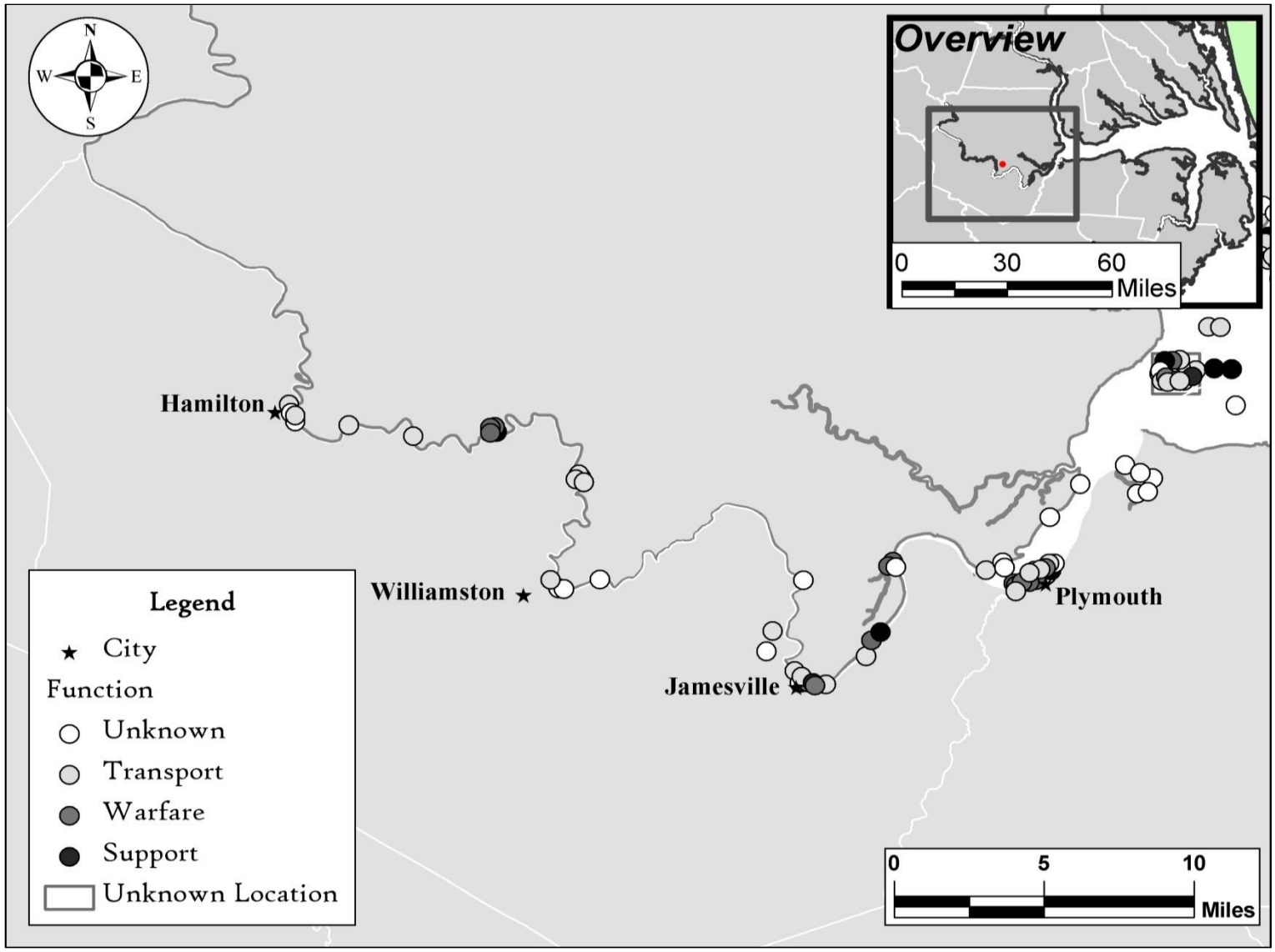

FIGURE 60. A map displaying the function of vessels lost in the Roanoke River, n=95. (Map by author, 2010.)

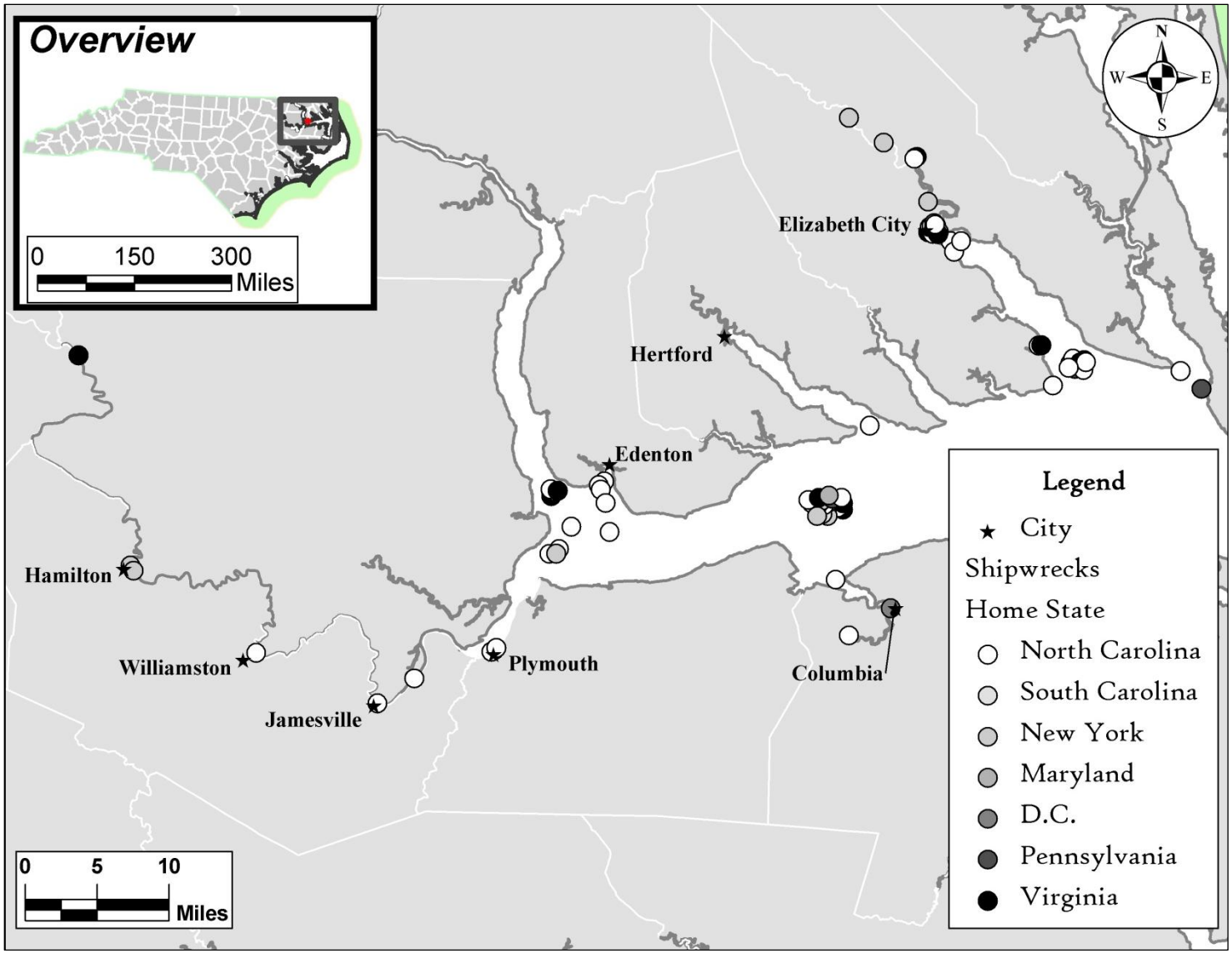

FIGURE 61. A map displaying the home port state for vessels lost in the Albemarle Sound region. (Map by author, 2010.)

What is notable about Figure 61 is that most vessels from outside North Carolina and Virginia are concentrated in the Pasquotank River. This can be seen even clearer in Figures 62 and 63, which highlight the Pasquotank River vessel losses. This trend is likely a reflection of the importance of the Dismal Swamp Canal as a maritime trade route. In turn, this correlates to Elizabeth City's importance as a Central Place at the canal's southern terminus. These vessels from distant states demonstrate a larger complimentary region than any other bodies of water in this study.

Research into the economic history of the Albemarle has shown a definite shift of what Walter Christaller (1966) defined as importance in the Central Places. Historical records report that Edenton was the focal point for imports and exports within the colony during the colonial period. After independence, importance slowly shifted to Elizabeth City, largely due to the opening of the Dismal Swamp Canal in 1805, and to Plymouth. Knowing that vessel loss happens most frequently near Central Places, it is hypothesized that this final trade analysis will show a correlation between the year of loss and the importance of the Central Place.

The following maps display vessel losses symbolized by time of loss (Figures 64-67). In order to do this, six periods have been determined. The first four categories represent generally accepted periods of American history that were also used in Chapter Four when the economic history was described. The final two categories encompass important divisions in the area's history. The categories are as follows-

1.) 1750-1780: Colonial period
2.) 1780-1860: Antebellum period
3.) 1860-1870: Civil War
4.) 1870-1900: Reconstruction
5.) 1900-1930: Dismal Swamp closes, Increase in railroads, Highway improvements
6.) 1930-2000: Decline of maritime shipping in the Albemarle Sound

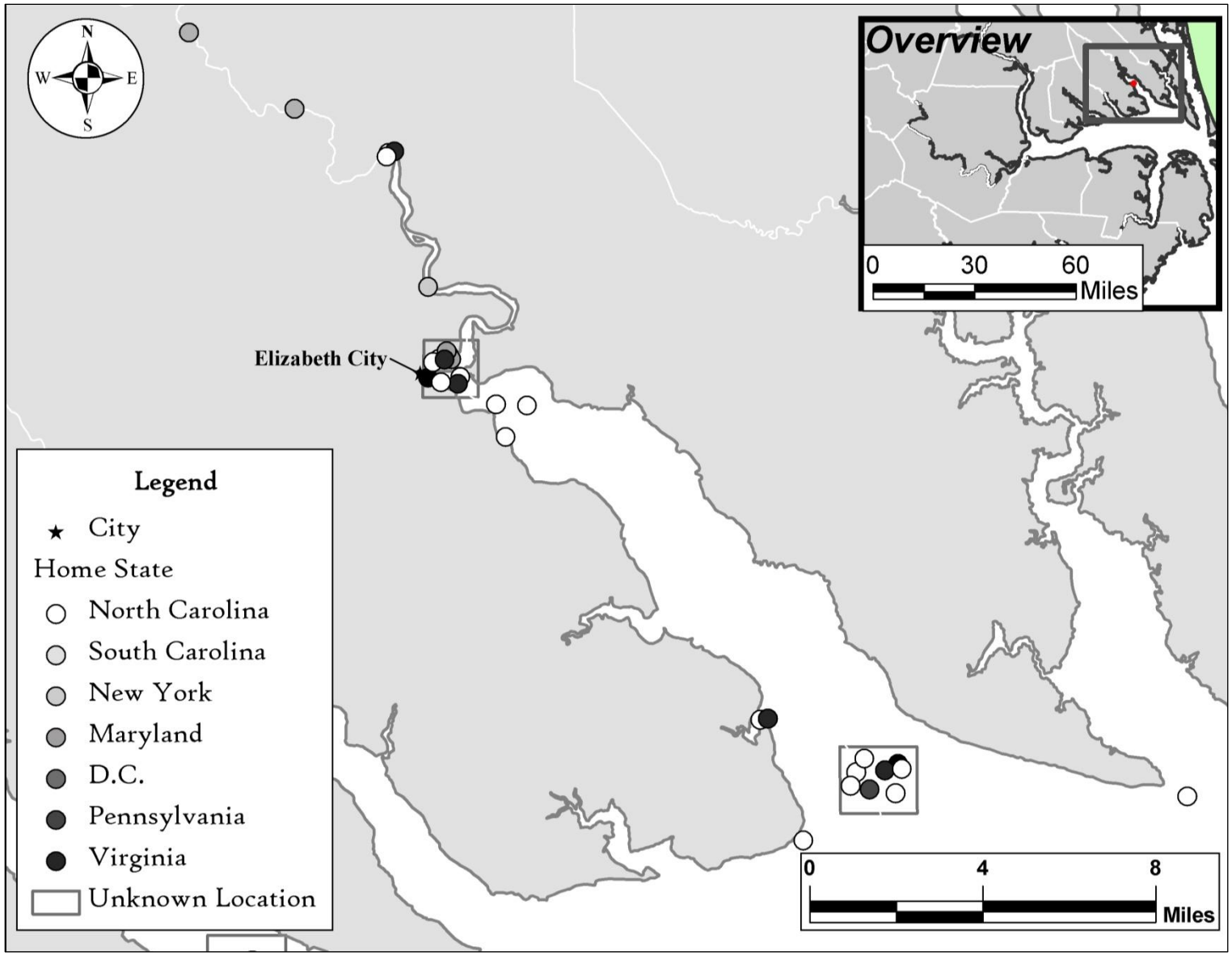

FIGURE 62. A map displaying the home state for the vessels lost in the Pasquotank River. (Map by author, 2010.)

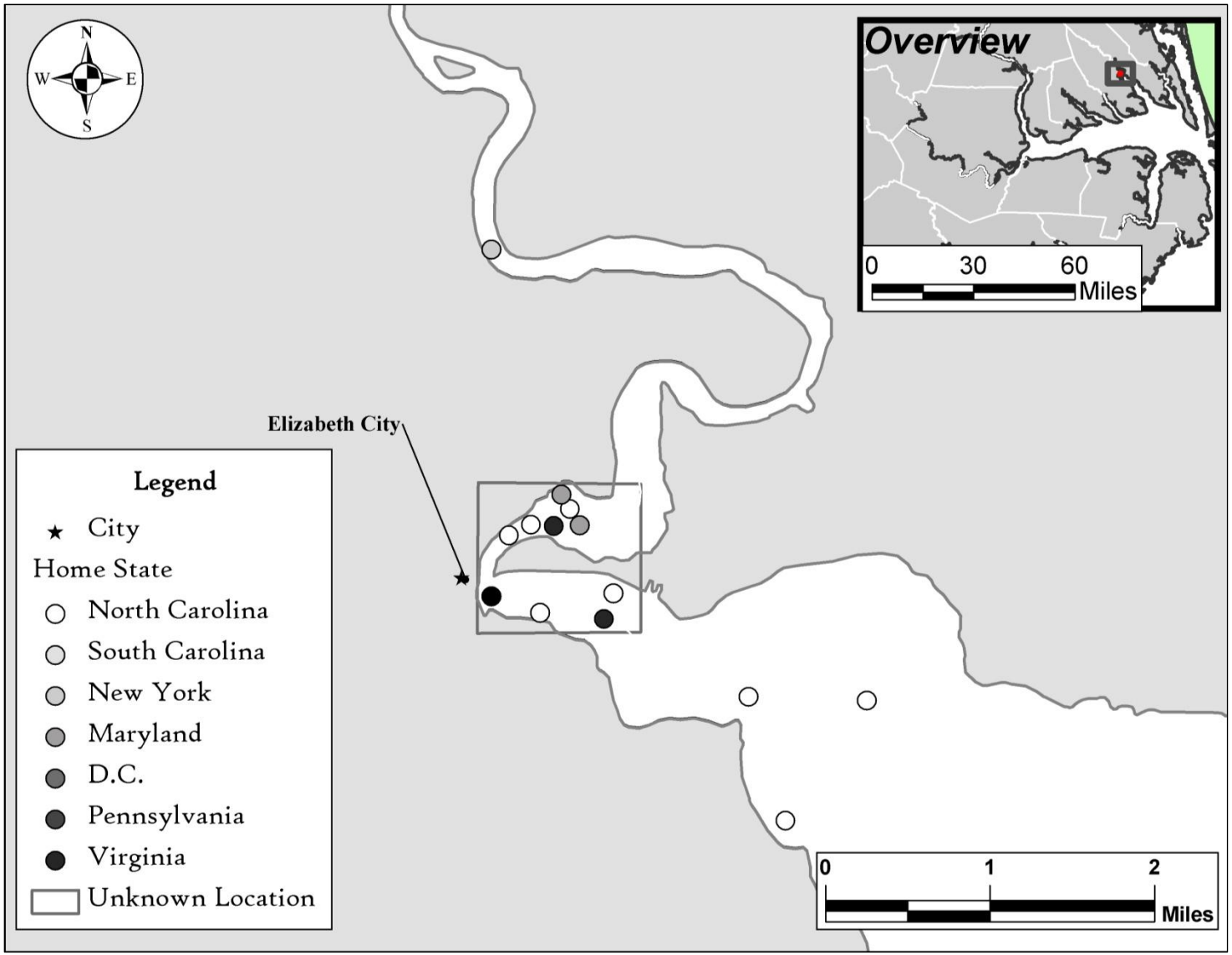

FIGURE 63. A map displaying shipwrecks near Elizabeth City, NC, based on the state of their home port. (Map by author, 2010.)

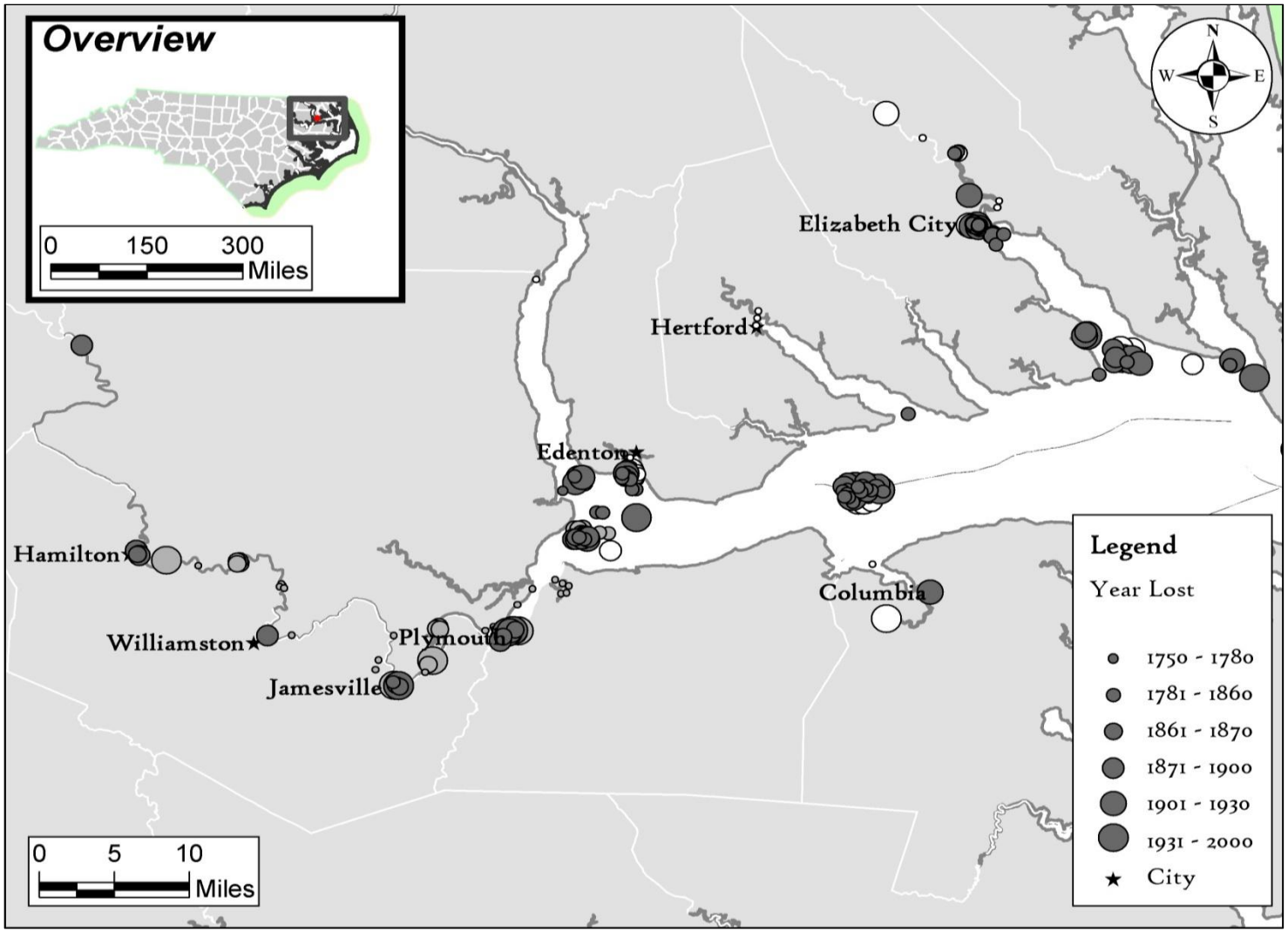

FIGURE 64. A map displaying the shipwrecks of the Albemarle Sound region categorized by the period the vessel was lost. Map by author, 2010.)

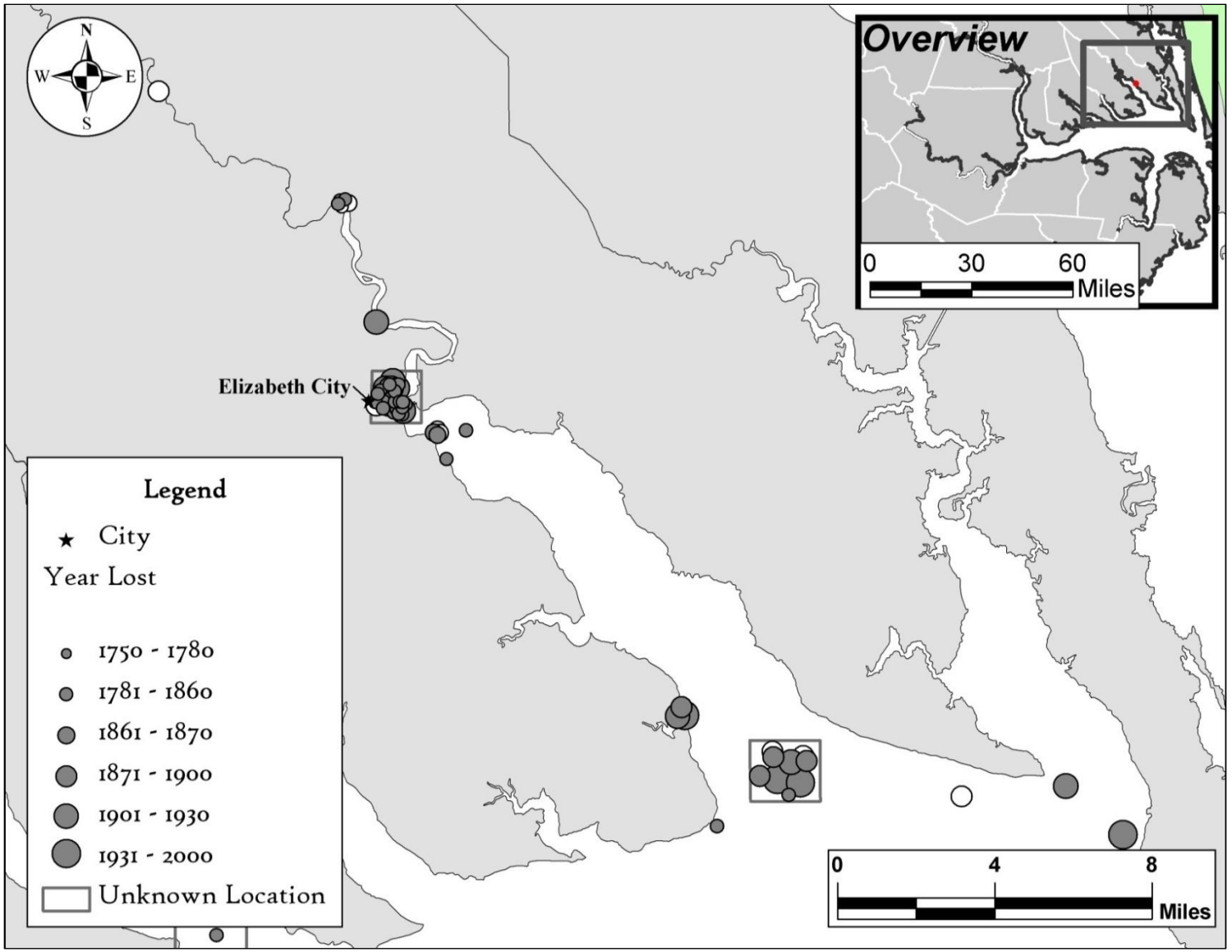

FIGURE 65. A map displaying the shipwrecks lost in the Pasquotank River, categorized by the period the vessel was lost. (Map by author, 2010.)

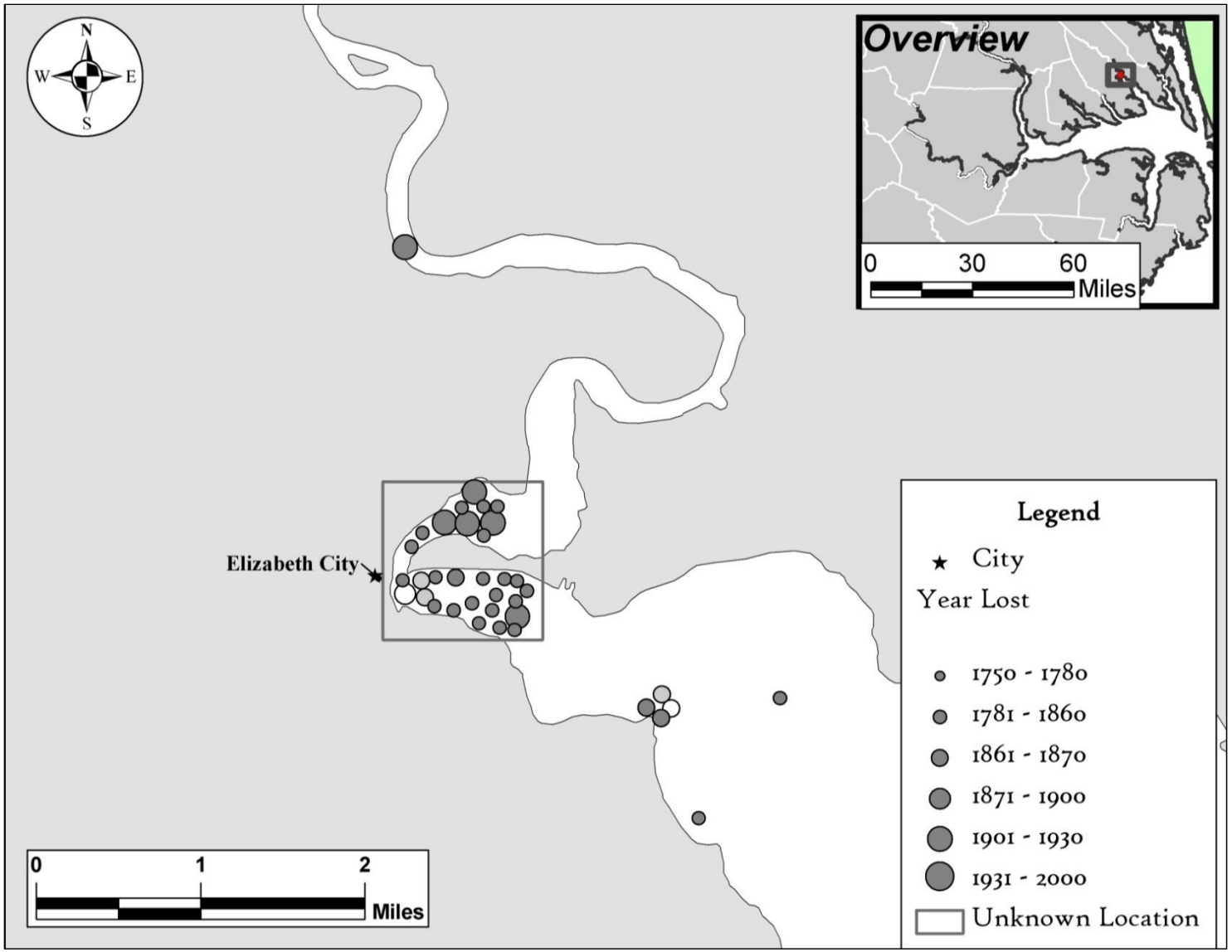

FIGURE 66. A map displaying the shipwrecks lost near Elizabeth City, NC, categorized by the period the vessel was lost. (Map by author, 2010.)

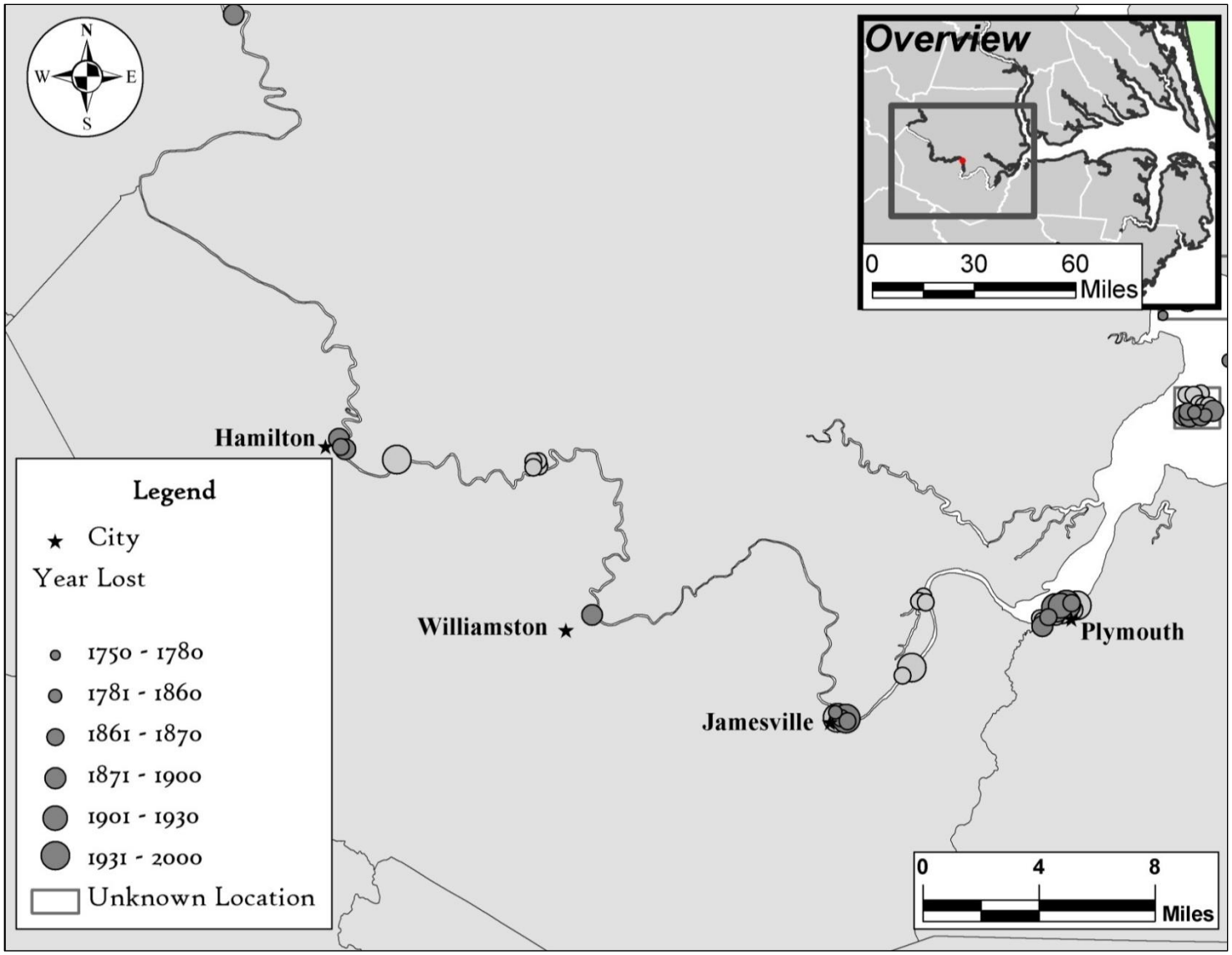

FIGURE 67. A map displaying the shipwrecks lost in the Roanoke River, categorized by the period the vessel was lost. (Map by author, 2009.)

It should also be noted that white circles signify unknown cause of loss, the light grey circles symbolize abandoned watercraft, and the dark grey circles symbolize shipwrecks.

Vessels from all categories appear to be dispersed throughout the study area, revealing little in terms of trends. A weakness of this analysis is the small number of vessels recorded from the colonial period. With such a small sample of early vessels, it is difficult to confirm any clear patterns of shifting importance between the Central Places.

Figure 68 displays all vessel losses with approximate locations known, along with a graph symbolizing the county population per decade. What is quickly apparent is the disparity between population and vessel losses. While population is a factor in identifying Central Places (Christaller 1966:17-18), it does not express the *importance* of a town with any degree of accuracy.

In the case of the Albemarle Sound region, location and environment appear to play a much larger role than population. Halifax is located on the outskirts of the study area, far from the Albemarle Sound. Overland travel was somewhat easier. Of great significance is the early arrival of railroads to the area, taking cargo away from the maritime shipping. Price (2006:143-144) found that the arrival of railroads increased the centrality of Plymouth and Jamestown, thus leading to a higher frequency of vessel traffic. In Halifax, railroads appear to have had the opposite effect. Close proximity to a major highway and early railroad activity overshadowed the maritime shipping industry. Halifax has the largest population by far, yet not a single vessel has been recorded as lost near its main Central Place, the town of Halifax.

Also at odds is Edenton, a major port even though the population of Chowan County remained low. Elizabeth City displays another example of disparity between population and vessel losses. The county population remains relatively low until the end of the 19th century.

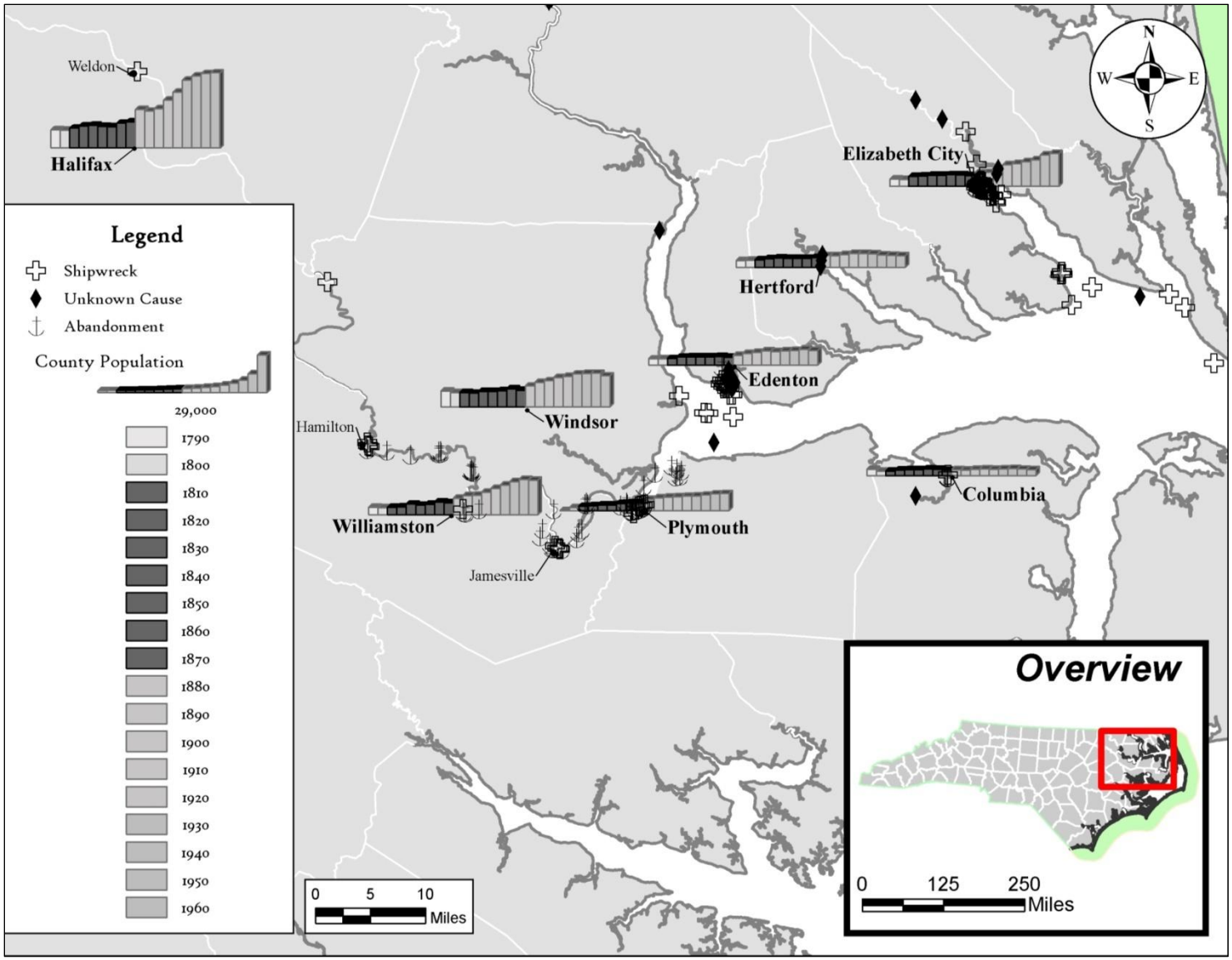

FIGURE 68. Vessel losses in the Albemarle Sound with approximate locations known and Central Places symbolized by county population. (Map by author, 2010.)

Early in the 20th century, the county experienced significant population growth at approximately the same time the Dismal Swamp Canal began its decline. This growth can be explained in part by the military presence in the county in the form of a Coast Guard Station and Naval Air Facility

At first glance, Windsor appears to be another port supporting a county with a large population and no vessel losses. Bertie County was included in this study because of its proximity to the Roanoke River. Because the Cashie River was not included in the research for this thesis, it is impossible to draw any correlations between population and vessel losses.

This geo-spatial analysis of trade supports previous findings. Specifically, it supports the importance each Central Place has been assigned in this thesis. All vessels involved in warfare were recorded in the Pasquotank and Roanoke Rivers. Support vessels are the same, with the exception of one vessel located in Edenton Harbor. This result suggests activity around a Central Place of Higher Order that does not occur around those of less importance. The fact that nearly all vessels built outside North Carolina and Virginia are centered on the Pasquotank River and Elizabeth City give credence to the opportunities brought to the Albemarle by opening the Dismal Swamp Canal- an inland waterway to the northern market. Analyzing vessel loss based on historic time period proved inconclusive. Examining the population of the Central Places and vessel loss location showed that, in this study, population is less a factor for determining Central Place importance as their location and environment.

Conclusion

The objective of this chapter was to analyze watercraft of the ASCLD geo-spatially. By noting vessels' proximity to one another, to the Central Places, and their location in the general

landscape several trends were observed supported earlier assessments of Central Place importance.

The Manner of Loss section demonstrated that nearly every vessel loss in the study area occurred within five miles of a port, most appear to occur in the vicinity of ports' waterfronts. There are few exceptions to this rule and fewer yet that fall outside a ten-mile radius. A majority of abandonments are found in the Roanoke River and, while there are occurrences of abandonments at the ports along the river, single occurrences can be found from its mouth upriver to Hamilton.

An examination of vessel dimensions in the context of loss location brought few surprises. Both the length and draught of most vessels were found to be in the lower half of the size categories and the vessels tended to get smaller as the events moved upriver. The breadth of most vessels was in the upper half of the size categories. Vessels in the Pasquotank River were narrower as they were lost further upriver, but those in the Roanoke River showed little change, remaining fairly steady in size. Mapping vessels according to their lifespan showed no noticeable trend.

Examining the function of vessels in their spatial context demonstrated that transport was not only a major purpose for water traffic, but that it occurred in all water systems in this study area. Vessels with support and warfare purposes were confined to the Pasquotank and Roanoke Rivers, with the exception of one support vessel located at Edenton Harbor. By placing vessels in their spatial context and categorizing them based on loss year, a temporal pattern was observed. The earliest vessel losses centered on Edenton Harbor, a port whose most influential years coincided with the colonial period. High vessel loss occurrence shifted to the Pasquotank River, near Elizabeth City, before eventually occurring more frequently in the Roanoke River. This

shift of vessel loss mirrors a shift in importance of the Central Places known through the historical record.

Historically, and now archaeologically, it is evident that Edenton, Elizabeth City, and Plymouth are Central Places of Higher Order. These ports have locations in the physical landscape that make them accessible to the largest vessels in the ASCLD. Their complementary regions are more expansive, evident by the diversity of vessels and the variety of home ports represented by vessels near Elizabeth City. The shift of Central Place importance from Edenton to Elizabeth City then to Plymouth can be seen in the geo-spatial distribution of watercraft from the colonial era through the recent past. Ultimately, this chapter demonstrated that location and accessibility are stronger indicators of importance than other factors such as population when concerned with the maritime economic scenario.

Chapter 7: Conclusion

This study of the vessel assemblage in the ASCLD is an attempt at challenging the historical record. Material culture has the potential to support the historical record, but it also has the ability to bring forth new information that can refute the written accounts of the past. By comparatively analyzing the archaeological dataset, an understanding of the Albemarle's maritime cultural landscape can be depicted through new sources and, ultimately, compared to the historical record.

Combining the techniques of archaeological survey and historical research, this study first examined previous archaeological works in search of precedence from which to build this research. Chapter Two outlined these influential works as well as the theoretical approaches that created the foundation for this study. Chapter Three described the methodologies used in the field, libraries, and archives. Chapter Four discussed the economic history and development of the eight counties making up the study area. The history portrayed in that chapter defined a cultural context for the analysis of the ASCLD that was discussed statistically in Chapter Five and geo-spatially in Chapter Six. These two chapters made up the heart of this thesis as they defined patterns of loss and the economic importance of the study region's Central Places.

Observations

The goal of this research was to augment and assess the economic history of the Albemarle Sound region using the archaeological record in order to determine if the archaeological record reflects, refutes, or redefines the region's economic evolution as it is generally accepted in the written history. Three major themes were used when analyzing the ASCLD- the manner in which vessels were lost, changes in technology, and trade. During the

analyses, several observations were made. Regarding the manner of loss, it was noticed that shipwrecks outnumbered abandoned watercraft nearly two to one, supporting descriptions of Albemarle Sound's waters as treacherous and difficult to navigate. It was also noted that almost all vessels were lost within five miles of a Central Place. Changes in technology suggested a shift towards larger ships with greater cargo capacity. Trends in trade demonstrated strong ties with northern ports. A chronological comparison of the vessels within the database shows the period of heaviest loss coincided with the Civil War though the period between 1870s to the 1930s remained steadily high.

The previous comparative studies completed prior to this research collected a higher number of abandoned vessels than shipwrecks. The work on the Roanoke River, whose dataset has been incorporated into this research, reported similar results. The higher number of shipwrecks may be indicative of Albemarle Sound generally where ships had less protection and there are no Central Places or convenient areas for abandonments or graveyard sites. The Roanoke River, with its multiple Central Places, has the largest number of abandoned watercraft detected to date. Previous studies demonstrated a tendency for abandoned vessels and ships' graveyards to occur near ports. The majority of ports discussed in this thesis are Central Places of Lower Order and this may be exhibited in the lack of abandoned vessels in the database. Another observation was the effect four years of the Civil War had on the maritime cultural landscape of the Albemarle Sound region. The 1860s had more vessel losses than any other decade by a very large margin. War abandonments also made up a large percentage of deliberately discarded watercraft. These incidents are well represented in the historical record, both academically and through local lore. Particularly on the Roanoke River, that time in history appears to play a large part in its maritime identity. The decades following the Civil War,

specifically the 1870s through the 1930s, show a somewhat steady series of vessel losses. These losses represent the period in which maritime shipping was at its peak. By 1930, the decline in water transportation had begun as both railroads and highways took over a large portion of the shipping industry. The low number of vessel losses from the 1940s through the present day demonstrates this decline in maritime shipping. These observations reflect the written history describing the dangers of traveling the region's waters, the Civil War activity and the growth and decline of maritime shipping.

When examining trends in technology, it became apparent that trends in ship length and gross tonnage were demonstrated by an increase in both over time. The introduction of larger vessels into the study area is likely a reflection of the growing agricultural industry and larger populations that demanded access to more goods and more shipping. It also demonstrates a more diverse fleet of transport vessels in the second half of the study period. The vessel specialization was a product of decades of growth in the region's maritime economic system. Many vessels remained below trend lines, demonstrating again the limitations environment puts on vessels. As technology improved on land, allowing faster and easier harvesting, so too did technology improve on the water. The results of the technological examinations reflect written history's accounts of shallow waters and some aspects of the agrarian economy.

The analysis involving trends in trade is the first instance in which the archaeological and historical records show signs of discord. According to vessels making up the ASCLD, the Albemarle Sound region looked north for both trade and shipbuilding. Vessels registered outside North Carolina were almost exclusively from northern states and the same is true for ships built outside North Carolina. This refutes the historical record where accounts of trading south, particularly to the West Indies, exist. There are two explanations for the discrepancy of sites

representing southern ties. The first, historic records place too much emphasis on trade with the West Indies. The second explanation recognizes that West Indies trade existed during the colonial period which is greatly underrepresented in the ASLCD. Further research may uncover additional sites representing the Albemarle's economic ties with the West Indies.

Limitations and Future Opportunities

Throughout the previous chapters, many challenges in the research were brought to light. Perhaps the most significant limitation came from the very database serving as its foundation. The biggest challenge to this thesis was the large amount of unknown information. A database of 249 vessels provides a reasonable sample to question and draw conclusions, but only if all vessels may be used in a query. The nature of the database, catering to both historically documented losses and archaeologically discovered vessels, made completing each dataset difficult and time consuming. In some cases, it may prove impossible to find all the desired information due to lack of identifying characteristics on archaeologically discovered vessels. Thus, the researcher is often left with much smaller samples to analyze.

Many research opportunities remain for the Albemarle Sound region. Sonar and magnetometer coverage is still needed for much of the study area. These datasets would not only add to the ASCLD, but would allow for better geo-spatial analysis by adding to the number of vessels with known locations. The highest priority should be new or updated surveys near ports and landings. Also, secondary and tertiary rivers and other out of the way areas that have high potential as abandonment areas need to be surveyed.

Much of the data collected in the ASCLD has yet to be fully examined, leaving many openings for further research on the vessel assemblage. There are many aspects of the cultural landscape to be explored and the database can offer great insight into the region's communities.

This thesis focused on economic history but there are many other aspects of the maritime cultural landscape that can be investigated. For instance, there are opportunities to incorporate terrestrial maritime aspects such as landings, maritime oriented businesses, bridges, place-names, lighthouses, and local shipbuilding. A better understanding of the landscape will improve interpretations of the vessel assemblage.

Conclusion

Using a comparative and generalist approach, this thesis sought to determine if the archaeological record reflects, refutes, or redefines the historical record concerning the maritime economic history of the Albemarle Sound region. The study focused on Central Places as economic indicators of their complementary regions. This research analyzed a database of 249 vessels, shipwrecked or abandoned within the study area, using statistical and geo-spatial methods. The results of this analysis show that, in most aspects, with the exception of southern trade routes, the archaeological record does reflect the historical record. This reflection is further proof that archaeology can complement history, acquiring cultural information through media otherwise unattainable to historians.

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Certificate of Enrolment: *Jane*
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Certificate of Enrolment: *Julia Ann*
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Certificate of Enrolment: *Marion A. Greene*
1895 3 October. Edenton, NC. *Certificates of Registration and Enrollment Issued for Merchant Vessels at Beaufort, Edenton, Elizabeth City, New Bern, Ocracoke, Plymouth, Washington, and Wilmington, North Carolina 1815-1902.* Roll 6. National Archives Microfilm Publications, National Archives and Records Administration, Washington, DC.

Certificate of Enrolment: *Marva Dough*
1815 2 June. *Certificates of Registration and Enrollment Issued for Merchant Vessels at Beaufort, Edenton, Elizabeth City, New Bern, Ocracoke, Plymouth, Washington, and Wilmington, North Carolina 1815-1902.* Roll 5. National Archives Microfilm Publications, National Archives and Records Administration, Washington, DC.

Certificate of Enrolment: *Mayflower*
1898 1 November. Edenton, NC. *Certificates of Registration and Enrollment Issued for Merchant Vessels at Beaufort, Edenton, Elizabeth City, New Bern, Ocracoke, Plymouth, Washington, and Wilmington, North Carolina 1815-1902.* Roll 6. 1996-2000 National Archives Microfilm Publications, National Archives and Records Administration, Washington, DC.
1900 30 May. Edenton, NC. *Certificates of Registration and Enrollment Issued for Merchant Vessels at Beaufort, Edenton, Elizabeth City, New Bern, Ocracoke, Plymouth, Washington, and Wilmington, North Carolina 1815-1902.* Roll 6. 1996-2000 National Archives Microfilm Publications, National Archives and Records Administration, Washington, DC.

Certificate of Enrolment: *Republican*
1844 26 May. Elizabeth City, NC. *Certificates of Registration and Enrollment Issued for Merchant Vessels at Beaufort, Edenton, Elizabeth City, New Bern, Ocracoke, Plymouth, Washington, and Wilmington, North Carolina 1815-1902.* Roll 8. National Archives Microfilm Publications, National Archives and Records Administration, Washington, DC.

Certificate of Enrolment: *Rising States*
1850 22 December. Elizabeth City, NC. *Certificates of Registration and Enrollment Issued for Merchant Vessels at Beaufort, Edenton, Elizabeth City, New Bern, Ocracoke, Plymouth, Washington, and Wilmington, North Carolina 1815-1902.* Roll 10. National Archives Microfilm Publications, National Archives and Records Administration, Washington, DC.

Certificate of Enrolment: *Rotary*
n.d. *Certificates of Registration and Enrollment Issued for Merchant Vessels at Beaufort, Edenton, Elizabeth City, New Bern, Ocracoke, Plymouth, Washington, and Wilmington, North Carolina 1815-1902.* Roll 6. National Archives Microfilm Publications, National Archives and Records Administration, Washington, DC.

Certificate of Enrolment: *Valient*
n.d. *Certificates of Registration and Enrollment Issued for Merchant Vessels at Beaufort, Edenton, Elizabeth City, New Bern, Ocracoke, Plymouth, Washington, and Wilmington, North Carolina 1815-1902.* Roll 4. National Archives Microfilm Publications, National Archives and Records Administration, Washington, DC.

Certificate of Enrolment: *Windsor*
1848 7 August. Elizabeth City, NC. *Certificates of Registration and Enrollment Issued for Merchant Vessels at Beaufort, Edenton, Elizabeth City, New Bern, Ocracoke, Plymouth, Washington, and Wilmington, North Carolina 1815-1902.* Roll 5, 8, 9, 10, 18. National Archives Microfilm Publications, National Archives and Records Administration, Washington, DC.

Site Files

n.d. Archaeological Site File, Albemarle Sound, *A. Von Nyvenheim*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Alice*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Alpha*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Alva*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Barbara Ann MacPhie*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Bravo*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Caroline Augusta*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Catherine Taylor*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Collector*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Commodore Perry*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Elizabeth*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Ella Crosby*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *I.D. Coleman*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *J. Daggit*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Jane*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *John W. Harding*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Joseph A. O'Brien*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Joseph N. Billing*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Kaye C. Green*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Manteo Mail Boat*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Marion A. Greene*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Marva Dough*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.

n.d. Archaeological Site File, Albemarle Sound, *Neuse*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Parrott*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Pearl*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Rio Lupton*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Roanoke Island Mail Boat*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Tourist*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Unknown Barge*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Unknown Schooner 10*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Unknown Schooner 11*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Unknown Vessel 10*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Vessel Cluster 4*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Valient*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Victory*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Albemarle Sound, *Wallkill*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Chowan River, *Crane*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Chowan River, *Edenton*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Chowan River, *Francis A. Perker*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Chowan River, *Greyhounds* Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Chowan River, *Hazard*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Chowan River, *Keel Creek Shipwreck*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Chowan River, *New Landing Ferry*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Chowan River, *Olive*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Chowan River, *Unknown Vessel 11*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.

n.d. Archaeological Site File, Chowan River, *Wyanoke Barge* Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Dismal Swamp, *Amelia Almira*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Dismal Swamp, *Fanny*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Dismal Swamp, *Fawn*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Dismal Swamp, *John Edmonson*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Dismal Swamp, *John J. Ward*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Dismal Swamp, *Kingston*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Dismal Swamp, *Rising States*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Edenton Harbor, *Ada*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Edenton Harbor, *Bertie*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Edenton Harbor, *E.M. Willis*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Edenton Harbor, *Four Lantoons*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Edenton Harbor, *Hetzell*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Edenton Harbor, *Independence*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Edenton Harbor, *Longfield*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Edenton Harbor, *Rotary*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Edenton Harbor, *Unknown Schooner 9*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Edenton Harbor, *Unknown Vessels Cluster 5*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *A. Rhea McCabe*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Acommac*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Alfred Ray*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Annie*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Appomattox*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.

n.d. Archaeological Site File, Pasquotank River, *Archann*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Atlas*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Black Warrior*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Commodore Bartlett*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Croatan*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Dorcas & Eliza*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Ellis*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Empire*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Fanny*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Forrestt*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Goat*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Grace Garnet*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Guy*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Hilda*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *J.C. Ehringhaus*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Julia Ann*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *L.O. Muir*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Maggie Etta*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Monocacy*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Nina*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Ocean Bird*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Partridge*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Pensacola*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.

n.d. Archaeological Site File, Pasquotank River, *Richmond Cedar Works 2*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Scribner*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Sea Bird*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Unknown Raft 1*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Unknown Sloop 1*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Unknown Vessel Cluster 1*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Unknown Vessel Cluster 2*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Unknown Vessel Cluster 3*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Vine Oak*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Virginia*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Weona*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *William E. Ferguson*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Pasquotank River, *Windsor*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Perquimans River, *Republican*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Roanoke River, *Bombshell*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Roanoke River, *Chainplate Wreck*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Roanoke River, *City of Long Branch*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Roanoke River, *Copper Wreck*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Roanoke River, *Dolly*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Roanoke River, *Floating Battery* Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Roanoke River, *Fort Branch Barge*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Roanoke River, *Hamilton*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Roanoke River, *Lady of the Lake*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.

n.d. Archaeological Site File, Roanoke River, *Liberty*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Roanoke River, *Lucille Ross*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Roanoke River, *Mast Wreck*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Roanoke River, *Mayflower*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Roanoke River, *Otsego*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
1982 Archaeological Site File, Roanoke River, P*opular Point Barge*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Roanoke River, *Ranger*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Roanoke River, *Roanoke River Light Ship*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Roanoke River, *Rodney Philips McPhie, Jr.*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Roanoke River, *Rotary*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Roanoke River, *Southfield*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Roanoke River, *Susan Preston MacPhie*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Scuppernong River, *Estella Randall*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Scuppernong River, *Lawrence*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
n.d. Archaeological Site File, Scuppernong River, *Marguerite*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.
2004 Archaeological Site File, Pasquotank River, *Sawyer's Creek Wreck*, Manuscript, Office of State Archaeology Underwater Branch, Kure Branch, NC.

Appendix

Selected Data from the

Albemarle Sound Cultural Resource Database

NAME	AREA	LOSS YEAR	CAUSE	RESOURCE	WAR LOSS	LENGTH	BREADTH	DEPTH	G. Tonnage	REFERENCES
A. Von Nyvenheim	Albemarle Sound	1932	WRECKED	Yes	No	85	23.8	6	42	*United States Treasury Department, 1931 *Site File *_Wilmington News_, 24 Feb 1932
Alice	Albemarle Sound	1836	WRECKED	Yes	No	0	0	0	0	*Site File *Angley, 1995
Alpha	Albemarle Sound	1865	WRECKED	No	No	0	0	0	107	*Berman, 1972 *Site File *Mitchell, 1975
Alva	Albemarle Sound	1909	UNKNOWN	Yes	No	55.1	21.4	4.1	27	*United States Treasury Department, 1908-1909 *Site File
Barbara Ann MacPhie	Albemarle Sound	1952	WRECKED	Yes	No	150.6	27	9.9	266	*United States Treasury Department, 1952 *Berman, 1972 *Site File
Blakely	Albemarle Sound	1826	WRECKED	Yes	No	0	0	0	0	*_Elizabeth City Star_, 9 Jan 1827
Bravo	Albemarle Sound	1836	WRECKED	No	No	0	0	0	0	*Site File
Caroline Augusta	Albemarle Sound	1844	ABANDONED	Yes	No	62.8	16	4.9	45	*Certificate of Enrollment, 1883 *Charles,2004 *Site File
Catherine Taylor	Albemarle Sound	1850	UNKNOWN	Yes	No	0	0	0	0	*Site File
Collector	Albemarle Sound	1829	WRECKED	Yes	No	62	20.3	6	75	*Certificate of Enrollment, 1821, 1826 *Site File *Angley, 1995
Commodore Perry	Albemarle Sound	1817	UNKNOWN	Yes	No	0	0	0	0	*Site File, *Angley, 1995
Elizabeth	Albemarle Sound	1877	UNKNOWN	Yes	No	0	0	0	0	*Site File *_Wilmington Star_, 24 April 1877
Ella Crosby	Albemarle Sound	1911	WRECKED	Yes	No	60.7	16.3	3.4	16	*United States Treasury Department, 1910" *Site File
I.D. Coleman	Albemarle Sound	0	UNKNOWN	No	No	93	16	7	0	*Site File *United States Army Corps of Engineers, 1893 *Anonymous, 2006
J. Daggit	Albemarle Sound	1907	UNKNOWN	Yes	No	33.6	17.3	3.4	8	*Site File
Jane	Albemarle Sound	1824	WRECKED	Yes	No	60.8	19	6.2	64	*Certificate of Enrollment, n.d. *Site File *Angley, 1995
John W. Harding	Albemarle Sound	1893	UNKNOWN	Yes	No	0	0	0	0	*Site File
Joseph A. O'Brien	Albemarle Sound	1912	WRECKED	Yes	No	0	0	0	218	*United States Treasury Department, 1912 *Berman, 1972. *Charles, 2004 *Site File
Joseph N. Billings	Albemarle Sound	1879	WRECKED	Yes	No	0	0	6	61	*Lloyd's Register, 1870 * Site File *_The Morning Star_, 5 April 1879
Kaye C. Green	Albemarle Sound	1998	UNKNOWN	Yes	No	47.8	15.2	7.6	28	*United States Treasury Department, 1961 (Under Morania No. 4) *Site File, *Gladding-Hearn Shipbuilding, 2008 *Wayne and Worsfold, 2003
Manteo Mail Boat	Albemarle Sound	1888	WRECKED	Yes	No	0	0	0	0	*Site File *_The Messenger_, 14 Aug 1888
Marion A. Greene	Albemarle Sound	1903	WRECKED	No	No	51.6	17.5	5	23	*Certificate of Enrollment, 1895 *Site File

NAME	AREA	LOSS YEAR	CAUSE	RESOURCE	WAR LOSS	LENGTH	BREADTH	DEPTH	G. Tonnage	REFERENCES
Marva Dough	Albemarle Sound	1824	WRECKED	Yes	No	50	16.6	5.5	38	*Certificate of Enrollment, 1815 *Site File, *Angley. 1999
Neuse	Albemarle Sound	1939	WRECKED	Yes	No	196.5	23.8	10.9	464	*United States Treasury Department, 1939 *Berman, 1972. *Charles, 2004 *Site File, **Wilmington News*, 22 Aug 1939
Parrott	Albemarle Sound	1889	WRECKED	Yes	No	0	0	0	11	*Berman, 1972 *Site File **Elizabeth City News*, 20 April 1889, **The Morning Star* 13 April 1889 *North Carolina Maritime History Council, 2006
Pearl	Albemarle Sound	1844	WRECKED	Yes	No	0	0	0	0	*Charles, 2004 *Site File
Rio Lupton	Albemarle Sound	1889	WRECKED	No	No	0	0	0	0	*Site File **The Morning Star*, 17 April 1889
Roanoke Island Mail Boat	Albemarle Sound	1889	WRECKED	Yes	No	0	0	0	0	*Site File **Wilmington Messenger*, 17 Sept 1889
Tourist	Albemarle Sound	1907	WRECKED	No	No	116	21.5	6.5	284	*Berman, 1972. *Site File **Wilmington Messenger*, 5 June 1907
Unknown Barge	Albemarle Sound	1933	WRECKED	Yes	No	0	0	0	0	*Site File **The Morning Star*, 18 Sept 1933
Unknown Schooner 10	Albemarle Sound	1877	WRECKED	Yes	No	0	0	0	0	*Site File **Wilmington Star*, 24 April 1877
Unknown Schooner 11	Albemarle Sound	1846	WRECKED	Yes	No	0	0	0	0	*Site File *Angley, 1995
Unknown Skiff 2	Albemarle Sound	1901	WRECKED	No	No	0	0	0	0	*Site File
Unknown Vessel 10	Albemarle Sound	1826	WRECKED	Yes	Yes	0	0	0	0	*Site File **Elizabeth City Star*, 9 Jan 1827
Unknown Vessel Cluster 4 (1)	Albemarle Sound	1789	WRECKED	Yes	No	0	0	0	0	*Site File **State Gazette*, 23 April 1789"
Unknown Vessel Cluster 4 (2)	Albemarle Sound	1789	WRECKED	Yes	No	0	0	0	0	*Site File **State Gazette*, 23 April 1789"
Unknown Vessel Cluster 4 (3)	Albemarle Sound	1789	WRECKED	Yes	No	0	0	0	0	*Site File **State Gazette*, 23 April 1789"
Valient	Albemarle Sound	1824	WRECKED	Yes	No	0	0	0	0	*Certificate of Enrollment, n.d. *Site File *Wilson Angley. 1999
Victory	Albemarle Sound	1825	WRECKED	Yes	No	0	0	0	0	*Site File *Wilson Angley. 1999
Wallkill	Albemarle Sound	1874	WRECKED	Yes	No	0	0	0	0	*Site File **Wilmington Weekly Star*, 1 May 1874
Crane	Chowan River	1929	WRECKED	Yes	No	104.3	14.9	8.6	80	*United States Treasury Department, 1928 *Berman, 1972; Charles, 2004 *Site File
Edenton	Chowan River	1930	WRECKED	Yes	No	120	22.4	8.3	265	*Site File *Berman, 1972

NAME	AREA	LOSS YEAR	CAUSE	RESOURCE	WAR LOSS	LENGTH	BREADTH	DEPTH	G. Tonnage	REFERENCES
Francis A. Perker	Chowan River	1852	UNKNOWN	Yes	No	0	0	0	0	*Site File * Angley, 1995
Greyhounds	Chowan River	1751	WRECKED	Yes	No	0	0	0	0	*Charles, 2004 *Site File
Hazard	Chowan River	1795	WRECKED	Yes	No	66	20	8.5	96	*Site File
Keel Creek Shipwreck	Chowan River	0	UNKNOWN	Yes	No	56	15	3	0	*Site File *Lehman, 2004
New Landing Ferry	Chowan River	1862	UNKNOWN	Yes	Yes	0	0	0	0	*Site File, including a page from "Shipwreck Encyclopedia of the Civil War: North Carolina, 1861-1865
Olive	Chowan River	1903	WRECKED	Yes	No	120.9	20.4	7	987	*Site File *Brown, n.d.
Unknown Vessel 11	Chowan River	0	UNKNOWN	Yes	No	75	20	3.5	0	*Site File *Lehman, 2004
Wyanoke Barge	Chowan River	0	UNKNOWN	Yes	No	18.3	7	0	0	*Site File *Lehman, 2004
Amelia Almira	Dismal Swamp	1851	WRECKED	Yes	No	46.5	16.2	4.9	0	*Certificate of Enrollment, n.d. *UAB File *Angley, 1995
Fanny	Dismal Swamp	1851	WRECKED	Yes	No	0	0	0	0	*Site File *Angley, 1995. *Certificate of Enrollment, 1839
Fawn	Dismal Swamp	1864	UNKNOWN	No	Yes	0	0	0	0	*Site File *Certificate of Enrollment, 1848
John Edmonson	Dismal Swamp	1851	UNKNOWN	Yes	No	63.7	17.2	5.2	46	*Certificate of Enrollment, 1847 *Site File *Angley, 1995.
John J. Ward	Dismal Swamp	0	UNKNOWN	No	No	137	30	10	295	*Llyod's Register, 1882 *Site File
Kingston	Dismal Swamp	1902	UNKNOWN	No	No	0	0	0	98	*Site File
Rising States	Dismal Swamp	1845	WRECKED	Yes	No	49	13	4.3	23	*Certificate of Enrollment, 1850 *Site File *Wilson Angley, 1995.
Ada	Edenton Harbor	1892	UNKNOWN	No	No	0	0	0	0	*Site File
Bertie	Edenton Harbor	1925	UNKNOWN	Yes	No	65	18	4.9	58	*United States Treasury Department, 1922 *Site File
Burrough's Site 0007EDS	Edenton Harbor	0	ABANDONED	Yes	No	85	22.5	7.5	0	* Rodgers, Bradley A. and A. Corbin, 2002. *Goodall, 2003.
E.M. Willis	Edenton Harbor	1925	WRECKED	Yes	No	61	20	5	44	*United States Treasury Department, 1912 *Site File
Four Lantons	Edenton Harbor	1760	UNKNOWN	Yes	No	0	0	0	0	*Site File *Marx, 1971
Hetzell	Edenton Harbor	0	UNKNOWN	No	No	0	0	0	0	*Site File **The Norfolk Virginian*, 21 Nov 1873

NAME	AREA	LOSS YEAR	CAUSE	RESOURCE	WAR LOSS	LENGTH	BREADTH	DEPTH	G. Tonnage	REFERENCES
Independence	Edenton Harbor	1778	UNKNOWN	Yes	No	0	0	0	0	*Charles, 2004
John's Island Wreck-EDS0001	Edenton Harbor	0	UNKNOWN	Yes	No	0	0	0	0	*Askins, 2000.
Liberty	Edenton Harbor	1825	UNKNOWN	Yes	No	0	0	0	0	*Charles, 2004
Longfield	Edenton Harbor	1820	WRECKED	Yes	No	0	0	0	0	*Site File
Rotary	Edenton Harbor	1882	WRECKED	Yes	No	95	17	7	122	*Certificate of Enrollment, n.d. *Berman, 1972. *Site File Site
Unknown Schooner 12	Edenton Harbor	1788	UNKNOWN	Yes	No	0	0	0	0	*Charles, 2004
Unknown Schooner 9	Edenton Harbor	0	WRECKED	Yes	Yes	0	0	0	0	*Site File, including a page from "Shipwreck Encyclopedia of the Civil War: North Carolina, 1861-1865"
Unknown Vessel Cluster 5 (2)	Edenton Harbor	1803	WRECKED	Yes	No	0	0	0	0	*Site File **The Wilmington Gazette*, 27 Sept 1803
Unknown Vessel Cluster 5 (3)	Edenton Harbor	1803	WRECKED	Yes	No	0	0	0	0	*Site File **The Wilmington Gazette*, 27 Sept 1803
Unknown Vessel Cluster 5 (4)	Edenton Harbor	1803	WRECKED	Yes	No	0	0	0	0	*Site File **The Wilmington Gazette*, 27 Sept 1803
Unknown Vessel Cluster 5 (5)	Edenton Harbor	1803	WRECKED	Yes	No	0	0	0	0	*Site File **The Wilmington Gazette*, 27 Sept 1803
Unknown Vessel Cluster 5(1)	Edenton Harbor	1803	WRECKED	Yes	No	0	0	0	0	*Site File **The Wilmington Gazette*, 27 Sept 1803
Unknown Vessel Cluster 6(1)	Edenton Harbor	1788	UNKNOWN	Yes	No	0	0	0	0	*Charles, 2004
Unknown Vessel Cluster 6(2)	Edenton Harbor	1788	UNKNOWN	Yes	No	0	0	0	0	*Charles, 2004
Unknown Vessel Cluster 6(3)	Edenton Harbor	1788	UNKNOWN	Yes	No	0	0	0	0	*Charles, 2004
Unknown Vessel Cluster 6(4)	Edenton Harbor	1788	UNKNOWN	Yes	No	0	0	0	0	*Charles, 2004
Unknown Vessel Cluster 6(5)	Edenton Harbor	1788	UNKNOWN	Yes	No	0	0	0	0	*Charles, 2004

NAME	AREA	LOSS YEAR	CAUSE	RESOURCE	WAR LOSS	LENGTH	BREADTH	DEPTH	G. Tonnage	REFERENCES
Unknown Vessel Cluster 6(6)	Edenton Harbor	1788	UNKNOWN	Yes	No	0	0	0	0	*Charles, 2004
Unknown Vessel Cluster 6(7)	Edenton Harbor	1788	UNKNOWN	Yes	No	0	0	0	0	*Charles, 2004
Unknown Vessel Cluster 6(8)	Edenton Harbor	1788	UNKNOWN	Yes	No	0	0	0	0	*Charles, 2004
A. Rhea McCabe	Pasquotank River	1853	UNKNOWN	Yes	No	0	0	0	0	*Site File
Acommac	Pasquotank River	1862	WRECKED	No	No	0	0	0	0	*Site File *Rawson and Woods, 1897 *Mitchell, 1975
Alfred Ry	Pasquotank River	1850	WRECKED	Yes	No	0	0	0	0	*Site File *Angley, 1995
Annie	Pasquotank River	1918	UNKNOWN	No	No	97	23.3	6.5	72	*United States Treasury Department, 1912 *Berman, 1972*Charles, 2004 *Site File *United States Army Corps of Engineers, 191 **The Daily Advance*, 9 April 1908; 8 April 1918
Appomattox	Pasquotank River	1862	ABANDONED	No	Yes	0	0	0	120	*Site File *United States Department of the Navy, n.d.
Archann	Pasquotank River	1857	WRECKED	Yes	No	50.5	15.1	4.5	24	*Certificate of Enrollment, *Site File **Elizabeth City Pioneer*, 17 Feb 1857
Atlas	Pasquotank River	1850	WRECKED	Yes	No	0	0	0	0	*Site File * Angley, 1995
Bible College Wreck	Pasquotank River	0	UNKNOWN	Yes	No	127	19.3	0	0	*North Carolina Division of Historical Resources, 2004
Black Warrior	Pasquotank River	1862	ABANDONED	Yes	No	92	24.8	7	144	*United States Treasury Department, 1924 *Berman, 1972 *Charles, 2004 *Site File *Elliott, 1994
Commodore Bartlett	Pasquotank River	1928	WRECKED	Yes	No	77.8	15.2	5.5	58	*United States Treasury Department, 1924 *Berman, 1972 *Charles, 2004 *Site File
Croatan	Pasquotank River	1929	UNKNOWN	Yes	No	53.6	14.8	4.4	22	*United States Treasury Department, 1913 *Site File
Dorcas & Eliza	Pasquotank River	0	ABANDONED	Yes	Yes	38	15	5	35	*Certificate of Enrollment , 1849 *Site File
Ellis	Pasquotank River	1862	UNKNOWN	No	No	0	0	0	0	*Berman, 1972" *Charles, 2004 *Site File
Empire	Pasquotank River	1850	WRECKED	Yes	No	70	17.4	5.3	57	*Certificate of Enrollment, 1846, 1850, 1851, 1858 *Site File **Newbernian*, 6 Aug 1850
Fanny	Pasquotank River	1862	WRECKED	No	No	145	0	0	0	*Site File *Mitchell, 1975
Forrest	Pasquotank River	1862	ABANDONED	No	Yes	95	0	0	0	*Charles, 2004 *Site File
Goat	Pasquotank River	1918	WRECKED	Yes	No	62.6	17.5	4.8	19	*United States Treasury Department, 1915 *Site File

NAME	AREA	LOSS YEAR	CAUSE	RESOURCE	WAR LOSS	LENGTH	BREADTH	DEPTH	G. Tonnage	REFERENCES
Grace Garnet	Pasquotank River	1850	WRECKED	Yes	No	60	17	4	36	*Site File *_Newbernian_, 6 Aug 1850 *North Carolina Maritime History Council, 2006
Guy	Pasquotank River	1911	WRECKED	Yes	No	57.5	10.6	2.2	12	*United States Treasury Department, 1912 *Site File
Hilda	Pasquotank River	1913	UNKNOWN	Yes	No	35	12.8	3	8	*United States Treasury Department, 1909, 1914, 1916-17, 1919 *Site File
J.C. Ehringhaus	Pasquotank River	1850	WRECKED	Yes	No	70.5	17.6	4.7	0	*Certificate of Enrollment, 1848 *Site File *_Newbernian_, 6 Aug 1850
Julia Ann	Pasquotank River	1850	WRECKED	Yes	No	48.5	16	5.3	36	*Certificate of Enrollment, n.d. *Site File *_Newbernian_, 6 Aug 1850
L.O. Muir	Pasquotank River	1912	WRECKED	Yes	No	54.6	14.7	3.8	13	*United States Treasury Department, 1909 *Site File
Maggie Etta	Pasquotank River	1889	WRECKED	Yes	No	0	0	0	8	*United States Treasury Department, n.d. *Site File *_Wilmington Star_, 13 April 1889 *_Elizabeth City News_, 16 April 1889 *_The Morning Star_, 20 April 1889
Monocacy	Pasquotank River	1956	WRECKED	Yes	No	200.4	23.8	11	466	*United States Treasury Department, 1924, 1939 *Berman, 1972.*Site File
Nina	Pasquotank River	1909	WRECKED	Yes	No	82.3	18.2	3.3	39	*Site File
Ocean Bird	Pasquotank River	1887	WRECKED	Yes	No	42	14	4	11	*Site File *_The Morning Star_, 5 Nov 1887 *_Wilmington Messenger_, 5 Nov 1887 *North Carolina Maritime History Council, 2006
Partridge	Pasquotank River	1918	WRECKED	Yes	No	51	15	2.8	21	*United States Treasury Department, 1917 *Site File
Pecan Farm Flat	Pasquotank River	0	UNKNOWN	Yes	No	60	9.25	0	0	*North Carolina Division of Historical Resources, 2004
Pensacola	Pasquotank River	1956	WRECKED	Yes	No	200.4	23.8	11	466	*United States Treasury Department, 1939 *Berman, 1972 *Site File
Richmond Cedar Works 2	Pasquotank River	1953	WRECKED	Yes	No	181	34.2	9.4	394	*United States Treasury Department, 1939 *Berman, 1972 *Site File
Sawyer's Creek Wreck	Pasquotank River	0	ABANDONED	Yes	Yes	89.5	25	0	0	*North Carolina Division of Historical Resources, 2004
Scribner	Pasquotank River	1879	WRECKED	Yes	No	0	0	0	0	*Site File *_The Morning Star_, 20 April 1879, 25 April 1879
Sea Bird	Pasquotank River	1862	WRECKED	Yes	No	0	0	0	202	*Berman, 1972 *Charles, 2004 *Site File
Unknown Raft 1	Pasquotank River	0	UNKNOWN	No	No	0	0	0	0	*Site File
Unknown Sloop 1	Pasquotank River	1886	WRECKED	Yes	No	0	0	0	0	*Site File *_The Weekly Star_, 3 Dec 1886
Unknown Vessel Cluster 1 (1)	Pasquotank River	1839	WRECKED	Yes	No	0	0	0	0	*Site File * Angley, 1995
Unknown	Pasquotank	1839	WRECKED	Yes	No	0	0	0	0	*Site File *Angley, 1995

NAME	AREA	LOSS YEAR	CAUSE	RESOURCE	WAR LOSS	LENGTH	BREADTH	DEPTH	G. Tonnage	REFERENCES
Vessel Cluster 1 (2)	River									
Unknown Vessel Cluster 1 (3)	Pasquotank River	1839	WRECKED	Yes	No	0	0	0	0	*Site File *Angley, 1995
Unknown Vessel Cluster 1 (4)	Pasquotank River	1839	WRECKED	Yes	No	0	0	0	0	*Site File *Angley, 1995
Unknown Vessels Cluster 2 (1)	Pasquotank River	1839	WRECKED	Yes	No	0	0	0	0	*Site File * Angley, 1995
Unknown Vessels Cluster 2 (10)	Pasquotank River	1839	WRECKED	Yes	No	0	0	0	0	*Site File *Angley, 1995
Unknown Vessels Cluster 2 (11)	Pasquotank River	1839	WRECKED	Yes	No	0	0	0	0	*Site File *Angley, 1995
Unknown Vessels Cluster 2 (12)	Pasquotank River	1839	WRECKED	Yes	No	0	0	0	0	*Site File, *Angley, 1995
Unknown Vessels Cluster 2 (2)	Pasquotank River	1839	WRECKED	Yes	No	0	0	0	0	*Site File *Angley, 1995
Unknown Vessels Cluster 2 (3)	Pasquotank River	1839	WRECKED	Yes	No	0	0	0	0	*Site File *Angley, 1995
Unknown Vessels Cluster 2 (4)	Pasquotank River	1839	WRECKED	Yes	No	0	0	0	0	*Site File *Angley, 1995
Unknown Vessels Cluster 2 (5)	Pasquotank River	1839	WRECKED	Yes	No	0	0	0	0	*Site File *Angley, 1995
Unknown Vessels Cluster 2 (6)	Pasquotank River	1839	WRECKED	Yes	No	0	0	0	0	*Site File *Angley, 1995
Unknown Vessels Cluster 2 (7)	Pasquotank River	1839	WRECKED	Yes	No	0	0	0	0	*Site File *Angley, 1995
Unknown Vessels Cluster 2 (8)	Pasquotank River	1839	WRECKED	Yes	No	0	0	0	0	*Site File *Angley, 1995

NAME	AREA	LOSS YEAR	CAUSE	RESOURCE	WAR LOSS	LENGTH	BREADTH	DEPTH	G. Tonnage	REFERENCES
Unknown Vessels Cluster 2 (9)	Pasquotank River	1839	WRECKED	Yes	No	0	0	0	0	*Site File *Angley, 1995
Unknown Vessels Cluster 3 (1)	Pasquotank River	0	WRECKED	No	No	0	0	0	0	*Site File **Elizabeth City Economist*, 2 Feb 1878
Unknown Vessels Cluster 3 (2)	Pasquotank River	0	WRECKED	No	No	0	0	0	0	*Site File **Elizabeth City Economist*, 2 Feb 1878
Vine Oak	Pasquotank River	1887	WRECKED	Yes	No	0	0	0	7	*United States Treasury Department, 1884*Site File **Elizabeth City Economist*, 11 Nov 1887
Virginia	Pasquotank River	1912	WRECKED	No	No	111.7	25.6	7	220	*Merchant Vessel of the United States, 1909 *Berman, 1972. *Charles, 2004 *Site File **The Weekly Advance*, 9 Aug 1912
Weona	Pasquotank River	1929	WRECKED	Yes	No	37.5	13	5.4	12	*Merchant Vessel of the United States, 1924 *Site File **Wilmington Star*, 19 Oct 1929
William E. Ferguson	Pasquotank River	1851	WRECKED	Yes	No	58	15.5	3.5	38	*Site File *Angley, 1995
Windsor	Pasquotank River	1850	WRECKED	Yes	No	69	17.7	16.8	67	*Certificate of Enrollment, 1848 *Site File **Newbernian*, 6 Aug 1850
Hertford Barge	Perquimans River	0	UNKNOWN	Yes	No	43	16	0	0	*North Carolina Division of Historical Resources, 2004
Larry's Drive In Barge	Perquimans River	0	UNKNOWN	Yes	No	68	13.5	0	0	*North Carolina Division of Historical Resources, 2004
Republican	Perquimans River	1850	WRECKED	No	No	57.7	17.7	4.7	40	*Certificate of Enrollment, 1844 *Site File * Angley, 1995
Winfall Barge	Perquimans River	0	UNKNOWN	Yes	No	75	27	8	0	*North Carolina Division of Historical Resources, 2004
Albemarle (CSS)	Roanoke River	1864	WRECKED	Yes	Yes	158	35.25	8.167	0	*Feuer… ORN series II, Volume 1, 247.
Bazely (USS)	Roanoke River	1864	WRECKED	Yes	Yes	70	16	6.5	50	*ORN Series II, Vol. I; Treasures of the Confederate Coast, p.344
Bombshell (USS and CSS)	Roanoke River	1864	WRECKED	No	Yes	96	0	0	126	*Official Records of the Union and Confederate Navies Series I, Volume 6: 473, North Atlantic Blockading Squadron, *UAB NC Shipwrecks Data Entry Form *"Report by the Quartermaster General Relative to Vessels Brought, Sold, and Chartered Since April 1, 1861." United States Congress, 40th Congress, 2nd Session, House Executive Document, No. 337 (1868) *Commander H.K. Davenport to C.W. Flusser April 18, 1864, ORN Series I, Volume 9:637 *J.W. Cooke, Commander CSN, to Commander R.F. Pickney May 7, 1864, ORN Seris I, Volume; ORN Series II, Volume 1:249 *Dictionary of American naval Fighting Ships, Volume II, Naval Department, Washington, DC, 1962:505). *John W. Hinds, Hunt for the Albemarle, Burd Street Press, Shippensburg PA (Hinds 2001:180).
Cable Wreck 19APR048	Roanoke River	0	ABANDONED	Yes	No	121.39	32.8	0	0	*Local informants and side scan data from 19 April, 2005.

NAME	AREA	LOSS YEAR	CAUSE	RESOURCE	WAR LOSS	LENGTH	BREADTH	DEPTH	G. Tonnage	REFERENCES
Chainplate Wreck (Isabella Ellis?)	Roanoke River	1864	ABANDONED	Yes	Yes	79.42	17.33	5.5	0	*Site File *New Berne Enrollments, 9 & 10 August 1858 *Letter from Benjamin Ellis to Captain Hunter, August 1, 1866:1; Lawrence 2002b;.
City of Long Branch	Roanoke River	1892	WRECKED	Yes	No	185	32	6.1	538	*page 1450 "Report of the Chief of Engineers, US Army; page 183 "River and Harbor Improvements" *Site File. *United States Department of the Treasury, 1889, 1892
Commerce	Roanoke River	1883	WRECKED	Yes	No	120	23.3	6.2	222	*Mitchell, 1975 *Certificate of Enrolment ,1878
Copper Wreck (Comet?)	Roanoke River	1864	ABANDONED	Yes	Yes	52.83	17.083	4.5	34	*Florida Museum of History Correspondence 6 March 1992, Lee Newsom. *Site File*Certificate of Enrolment, 1853, *C.W. Flusser to H.K. Davenport November 21, 1863, ORN Series I, Volume 9:324; 1862 *Long, 1898:736 *C.W. Flusser to S.P. Lee April 12, 1864, ORN, Series I, Volume 9: 609-610 *C.W. Flusser to H.K. Davenport November 21, 1863, ORN Series I, Volume 9:324 *Certificate of Enrolment, 1853 *Certificate of Enrolment July 25, 1854 at Elizabeth City NC *Certificate of Enrolment 1856 *Certificate of Enrolment 1856 NC *Certificate of Enrolment April 18, 1860 at Elizabeth City, NC *Certificate of Enrollment 1860
Currituck	Roanoke River	1878	ABANDONED	Yes	No	0	0	0	91	*United States Department of the Treasury
Cut Cypress Wreck	Roanoke River	0	ABANDONED	Yes	No	44	11.7	5.67	0	*Vessel inspection June 15, 2005
Deadwater Wreck 20APR224	Roanoke River	0	ABANDONED	Yes	No	123.43	28.5	0	0	*Discovered 13 June 2005 during ECU Field School during ground truthing of sonar images completed April 20, 2005.
Dolly (CSS)	Roanoke River	1865	ABANDONED	No	Yes	0	0	0	0	*Site Form *Correspondence from the US Steamer SHAMROCK, New Berne, June 16th, 1865 *J.C. Howell to Gideon Welles June 27, 1865, ORN series I Vol. 12, p. 164-165 *Jas. S. Thornton to Commander Macomb May 14, 1865, ORN Series 1, Volume 12, pp.150-151 *W.H. Macomb to S.P. Lee September 7, 1864, ORN Series I, Volume 10, p.440.
Emma	Roanoke River	1878	ABANDONED	Yes	No	0	0	0	139	*United States Department of the Treasury
Empire	Roanoke River	1851	WRECKED	No	No	70	17.3	5.3	58	*The Old North State, "Marine News-Port of E. City," 4 January 1851, Elizabeth City, NC *The Old North State, "Marine News. Port of Elizabeth City.," 24 May 1851, Elizabeth City, NC *The Old North State, "Disasters.," 14 June 1851, Elizabeth City, NC *The Sun, "Marine Disaster," p. 4, vol. XXIX, issue 23, 14 June 1851, Baltimore, MD *Certificate of Enrolment , 1846 *Certificate of Enrolment ,1851,
Floating Battery	Roanoke River	1865	ABANDONED	Yes	Yes	20	20	8	0	*Site File *Feb. 23, 1863 Letter from W.G. Bartholemew (Bauhotman) Major Command of Post? *Report of the Chief of Engineers, Vol. 8, p. 730 *Report of the Chief of Engineers Vol. 19, p.788-789, 1873 *Lawrence 1990:3 *W.H. Macomb to D.D. Porter April 13, 1865 ORN Series I, Volume 12:116 *Charles L. Franklin to Commander John C. Febiger ORN Series I, Volume 12:108 *Jno. C. Febiger to W.H. Macomb April 9, 1865 ORN Series I, Volume 12:107-108
Fort Branch Barge	Roanoke River	1952	ABANDONED	Yes	No	110	33	8	0	*Site File

NAME	AREA	LOSS YEAR	CAUSE	RESOURCE	WAR LOSS	LENGTH	BREADTH	DEPTH	G. Tonnage	REFERENCES
Hamilton	Roanoke River	1917	WRECKED	Yes	No	131.1	25.2	6.5	342	*Site File *Merchant Steam Vessels of the United States *Davis Stick's Collection at the Outer Banks History Center January 1990 *Certificate of Enrolment, 1884 *The Charlotte Observer, "Steamer Hamilton Sinks in Thirty Feet of Water," 2 March 1917, p. 13, Charlotte, NC.
Immigrant (formerly "Unknown Tug 2")	Roanoke River	1957	ABANDONED	Yes	No	60.5	13.3	5.5	25	*Lawrence, Richard W. Reconnaissance of the Roanoke River from Hamilton to Plymouth, N.C. Kure Beach: North Carolina Underwater Archaeology Unit, 1990; Investigated 14 June 2005 during ECU Field School during ground truthing of sonar images. *Annual List of Merchant Vessels of the United States.
J.T. Murdock	Roanoke River	1890	WRECKED	Yes	No	0	0	0	0	*The Sun, "Four Barges Sunk-Refreshing Rains and Improved Crop Outlook.," p. Supplement 2, vol. CVII, issue 63, 29 July 1890, Baltimore, MD
L. and W. Showell	Roanoke River	1893	WRECKED	Yes	Yes	83.5	24.2	6.3	92	*The Sun, "Miscellaneous News of the Shipping," p. 8, vol. CXII, issue 128, 14 April 1893, Baltimore, MD. *Annual List of Merchant Vessels of the United States, United States Department of the Treasury, Bureau of Navigation, for year 1893.
Lady of the Lake	Roanoke River	1851	WRECKED	Yes	No	63	16.5	6.25	60	*Site File *Angley, 1995 *Alexander Crosby Brown: 1947 The 'Lady of the Lake' in Dismal Swamp. The American Neptune 7(1):66 & 1970 *The Dismal Swamp Canal. Norfolk County Historical Society, Chesapeake, VA. Roanoke Advocate, 13 May 1830.
Liberty	Roanoke River	1857	WRECKED	Yes	No	85.5	22.167	9	152	*Site File *TRI-WEEKLY COMMERCIAL 23 April 1857 *RECORDS OF MARINE INSPECTION AND NAVIGATION: *Certificates of Enrolment Issued at Plymouth, North Carolina, 1846-1861. *Democratic Banner, "Mail Steamer on the Roanoke from Hamilton to Plymouth," 7 May 1857, Williamston, NC. *North Carolina Business History, "Steamboats in North Carolina," *http://www.historync.org/NCsteamboatlist1850-1860.htm; http://www.historync.org/Liberty.htm
Light Boat MM (formerly "Unknown Light Boat"	Roanoke River	1864	ABANDONED	Yes	Yes	0	0	0	12	*Commander Davenport to Lt. Commander Flusser, November 19, 1863, Official Records of the Union and Confederate Navies, Series I, Volume 9, (Harrisburg: Historic Times, 1987), 316. *Flint, Willard "Lightships of the United States Government," Coast Guard Historian's Office, 1989. "Roanoke River (Replica), NC," *http://www.lighthousefriends.com/light.asp?ID=879
Lucille Ross	Roanoke River	1950	WRECKED	Yes	No	70.7	16.6	7.6	61	*Site File *United States Department of the Treasury *image www.history.navy.mil/…/ i01000/i01799c.htm
Mast Wreck (Long Shoal Light Boat?)	Roanoke River	1864	ABANDONED	Yes	Yes	81	24	9.33	160	*Florida Museum of History Correspondence Lee Newsome to Mark Wilde-Ramsing 24 February 1993. *Site File *Contract for the Construction of the Long Shoals Light Boat, August 15, 1837 *logbook of the USS WHITEHEAD *Contract for Repairing the Long Shoal Light Boat Frb. 1829 (appears to be a different light boat) *Correspondence. Lawrence: BROAD CREEK BLOCKADE, 2002, 11.
Mayflower	Roanoke River	1920	WRECKED	Yes	No	92.6	21.7	5.2	93	*Site File *United States Department of the Treasury, 1904 *Certificates of Enrolment, 1898 , 1900.
North Carolina	Roanoke River	1831	WRECKED	Yes	No	80	17	0	70	*ROANOKE ADVOCATE, 8 December 1831, Halifax NC; Merchant Steam Vessels of the United States 1790-1868. *http://www.historync.org/NCsteamboatlist1812%20-%201849.htm; http://www.historync.org/NC2.htm
Norwood	Roanoke River	1890	WRECKED	No	No	0	0	0	0	*The Sun, "Four Barges Sunk-Refreshing Rains and Improved Crop Outlook.," p. Supplement 2, vol. CVII, issue 63, 29 July 1890, Baltimore, MD

NAME	AREA	LOSS YEAR	CAUSE	RESOURCE	WAR LOSS	LENGTH	BREADTH	DEPTH	G. Tonnage	REFERENCES
Otsego (USS)	Roanoke River	1864	WRECKED	Yes	Yes	230	35	10	974	*North Carolina Archaeological Site Form VI *Archaeological Investigations in the Roanoke River, 2002 *The Old Steam Navy, Donald L. Canney
Pioneer	Roanoke River	1846	WRECKED	No	No	0	0	0	0	*The Jeffersonian Republican, 3 March 1846, New Orleans, LA. The Tarboro' Press, 4 March 1846, Vol. XXI, No. 9, Tarboro, NC
Poplar Point Barge	Roanoke River	0	ABANDONED	Yes	No	79.426	24.583	6.25	0	*North Carolina Shipwreck Site Form Poplar Point Barge; 1982 *North Carolina Underwater Archaeological Site Form Poplar Point Barge, Wilde-Ramsing, Bright, Lawrence *Site Inspection 0025-ROR Henry's Barge October 1, 2001, Nathan Henry.
Ranger	Roanoke River	1896	WRECKED	Yes	No	86.5	22.2	5.5	85	*Site File **Wilmington Messenger*, 1896 *Dunn manuscript, UAB, Whitfield Report. *United States Department of the Treasury, 1894.
Roanoke River Light Ship	Roanoke River	1862	ABANDONED	Yes	Yes	76	21.5	8.75	125	*Site File *Custom House Letter of Edenton NC September 25, 1870 from Jim Pleasants Archives, 2/8/80.
Rodney Philips McPhie, Jr.	Roanoke River	1959	WRECKED	Yes	No	153.5	30.7	10.4	392	*Site File *Tidewater Atlantic 1990; U.S. Department of Commerce 1959 *Annual List of Merchant Vessels of the United States. U.S. Department of Commerce, Washington, DC.
Rotary	Roanoke River	1882	WRECKED	Yes	No	120.5	17.8	8.2	187	*Site File *Wilson Angley *NORTH CAROLINA SHIPWRECK REFERENCES FROM NEWSPAPERS OF THE LATE EIGHTEENTH, NINETEENTH AND EARLY TWENTIETH CENTURIES, 1991; *Lytle, William M. Merchant Steam Vessels of the United States: 1790-1868. : "The Lytle-HoldcamperList." Initially compiled by William M. Lytle and Forrest R. Holdcamper. Staten Island, New York : Steamship Historical Society of America, 1975. *The Economist 28 November 1882. Certificate of Enrolment Issued at Edenton issued 14 October 1874 and 17 July 1878. American Lloyd's Register of American and Foreign Shipping. Record of American and Foreign Shipping. Eddey, Gary E. "Carnes and Alfred: Shipwrights in Greenpoint, Brooklyn," http://www.greenpt.com/carnesandgpship.htm
Solicitor (formerly "Unknown Tug 3")	Roanoke River	1952	ABANDONED	Yes	No	44.3	13.4	4.9	20	*Lawrence, Richard W. Reconnaissance of the Roanoke River from Hamilton to Plymouth, N.C. Kure Beach: North Carolina Underwater Archaeology Unit, 1990.
Southern Kraft No. 3	Roanoke River	1975	ABANDONED	Yes	No	66.9	16.35	6	54	*Investigated 14 and 15 June 2005 during ECU Field School *Department of Commerce, Bureau of Navigation, Merchant Vessels of the United States 1943 (Washington: Government Printing Office, 1943), 286 *US Department of Commerce, Bureau of Navigation, Merchant Vessels of the United States 1956, (Washington: Government Printing Office, 1956), 497. *US Department of Transportation, United States Coast Guard, Merchant Vessels of the United States 1974, (Washington: Government Printing Office, 1974), 1069.
Southfield (USS)	Roanoke River	1864	WRECKED	Yes	Yes	200	34	11.75	750	*Site File *Dictionary of American Naval Fighting Ships Volume VI, Washington 1976; *USS Southfield: An Historical and Archaeological Investigation of a Converted Gunboat, Thesis, James D. Spirek, 1993.
Susan Preston MacPhie	Roanoke River	1959	WRECKED	Yes	No	152.2	27.6	9.5	272	*Site File *Information on vessels for North Carolina Ports *United States Department of Treasury, 1955 *Tidewater Atlantic 1990. *State of Delaware, "Bethel Shipyard," *http://archives.delaware.gov/markers/sc/BETHEL%20SHIPYARD%20SC%2079.

NAME	AREA	LOSS YEAR	CAUSE	RESOURCE	WAR LOSS	LENGTH	BREADTH	DEPTH	G. Tonnage	REFERENCES
										shtml
Tom's Wreck 19APR063	Roanoke River	0	ABANDONED	Yes	No	100	31	0	0	*Discovered 8 June 2005 during ECU Field School during ground truthing of sonar images.
Unknown Anomaly 1	Roanoke River	0	ABANDONED	Yes	No	16.9	3.4	0	0	
Unknown Anomaly 10	Roanoke River	0	ABANDONED	Yes	No	21.3	10.6	0	0	
Unknown Anomaly 11	Roanoke River	0	ABANDONED	Yes	No	147.5	72.3	0	0	
Unknown Anomaly 12	Roanoke River	0	ABANDONED	Yes	No	41.9	18.3	0	0	
Unknown Anomaly 13	Roanoke River	0	ABANDONED	Yes	No	59.8	12.9	0	0	
Unknown Anomaly 14	Roanoke River	0	ABANDONED	Yes	No	139.3	34.5	0	0	
Unknown Anomaly 15	Roanoke River	0	ABANDONED	Yes	No	23.6	9.8	0	0	
Unknown Anomaly 2	Roanoke River	0	ABANDONED	Yes	No	34.7	12.4	0	0	
Unknown Anomaly 3	Roanoke River	0	ABANDONED	Yes	No	78.4	27.3	0	0	
Unknown Anomaly 4	Roanoke River	0	ABANDONED	Yes	No	90.4	33.5	0	0	
Unknown Anomaly 5	Roanoke River	0	ABANDONED	Yes	No	99.4	50.1	0	0	
Unknown Anomaly 6	Roanoke River	0	ABANDONED	Yes	No	26.5	17.1	0	0	
Unknown Anomaly 7	Roanoke River	0	ABANDONED	Yes	No	10.5	4.3	0	0	
Unknown Anomaly 8	Roanoke River	0	ABANDONED	Yes	No	76.8	13.3	0	0	
Unknown Anomaly 9	Roanoke River	0	ABANDONED	Yes	No	71.5	14.5	0	0	
Unknown Ferry Boat	Roanoke River	1878	WRECKED	Yes	No	0	0	0	0	*The Sun, "A Ferry Boat Disaster in the Roanoke River - Two Persons Drowned.," p. 1, vol. LXXXII, issue 49, 12 January 1878, Baltimore, MD
Unknown Flat 1E	Roanoke River	0	ABANDONED	Yes	No	0	0	0	0	*"An Underwater Cultural Resource Survey of a Proposed Barge Landing Site on the Roanoke River near Plymouth, North Carolina." Washington NC: Tidewater Atlantic Research, Inc., 1990.
Unknown Flat 1W	Roanoke River	0	ABANDONED	Yes	No	0	0	0	0	*"An Underwater Cultural Resource Survey of a Proposed Barge Landing Site on the Roanoke River near Plymouth, North Carolina." Washington NC: Tidewater Atlantic Research, Inc., 1990.
Unknown Flat 2E	Roanoke River	0	ABANDONED	Yes	No	0	0	0	0	*"An Underwater Cultural Resource Survey of a Proposed Barge Landing Site on the Roanoke River near Plymouth, North Carolina." Washington NC: Tidewater

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										Atlantic Research, Inc., 1990.
Unknown Flat 2W	Roanoke River	0	ABANDONED	Yes	No	0	0	0	0	*"An Underwater Cultural Resource Survey of a Proposed Barge Landing Site on the Roanoke River near Plymouth, North Carolina." Washington NC: Tidewater Atlantic Research, Inc., 1990.
Unknown Flat 3E	Roanoke River	0	ABANDONED	Yes	No	0	0	0	0	*"An Underwater Cultural Resource Survey of a Proposed Barge Landing Site on the Roanoke River near Plymouth, North Carolina." Washington NC: Tidewater Atlantic Research, Inc., 1990.
Unknown Flat 3W	Roanoke River	0	ABANDONED	Yes	No	0	0	0	0	*"An Underwater Cultural Resource Survey of a Proposed Barge Landing Site on the Roanoke River near Plymouth, North Carolina." Washington NC: Tidewater Atlantic Research, Inc., 1990.
Unknown Flat 4 W	Roanoke River	0	ABANDONED	Yes	No	0	0	0	0	*"An Underwater Cultural Resource Survey of a Proposed Barge Landing Site on the Roanoke River near Plymouth, North Carolina." Washington NC: Tidewater Atlantic Research, Inc., 1990.
Unknown Hulk 1	Roanoke River	1863	ABANDONED	Yes	Yes	0	0	0	0	*ORN Series I, Volume 9, 658-659
Unknown Hulk 2	Roanoke River	1863	ABANDONED	Yes	Yes	0	0	0	0	*ORN Series I, Volume 9, 658-659
Unknown Jamesville Barge	Roanoke River	0	ABANDONED	No	No	0	0	0	0	*Annual Report of the US Army Corps of Engineers Volume 2., 1913. Page 1915
Unknown Lighter	Roanoke River	1865	ABANDONED	No	Yes	0	0	0	0	*J.C. Howell to Gideon Welles, June 27, 1865, Official Records of the Union and Confederate Navies, Series I, Volume 12 (Harrisburg: Historic Times, 1987), 165.
Unknown Punt 1	Roanoke River	0	ABANDONED	Yes	No	12.5	0	0	0	*Richard W. Lawrence RECONNAISSANCE OF THE ROANOKE RIVER FROM HAMILTON TO PLYMOUTH, NC, (Kure Beach: North Carolina Underwater Archaeology Branch, 1990), 2.
Unknown Punt 2	Roanoke River	0	ABANDONED	Yes	No	12.5	0	0	0	*Richard W. Lawrence RECONNAISSANCE OF THE ROANOKE RIVER FROM HAMILTON TO PLYMOUTH, NC, (Kure Beach: North Carolina Underwater Archaeology Branch, 1990), 2.
Unknown Punt 3	Roanoke River	0	ABANDONED	Yes	No	12.5	0	0	0	*Richard W. Lawrence RECONNAISSANCE OF THE ROANOKE RIVER FROM HAMILTON TO PLYMOUTH, NC, (Kure Beach: North Carolina Underwater Archaeology Branch, 1990), 2.
Unknown Punt 4	Roanoke River	0	ABANDONED	Yes	No	12.5	0	0	0	*Richard W. Lawrence RECONNAISSANCE OF THE ROANOKE RIVER FROM HAMILTON TO PLYMOUTH, NC, (Kure Beach: North Carolina Underwater Archaeology Branch, 1990), 2.
Unknown Punt 5	Roanoke River	0	ABANDONED	Yes	No	12.5	0	0	0	*Richard W. Lawrence RECONNAISSANCE OF THE ROANOKE RIVER FROM HAMILTON TO PLYMOUTH, NC, (Kure Beach: North Carolina Underwater Archaeology Branch, 1990), 2.
Unknown Schooner 1	Roanoke River	1864	ABANDONED	Yes	Yes	0	0	0	0	*ARCHAEOLOGICAL INVESTIGATIONS OF THE BROAD CREEK BLOCKADE: 1990 AND 1991 FIELD SEASONS
Unknown Schooner 2	Roanoke River	1864	ABANDONED	Yes	Yes	0	0	0	0	*ARCHAEOLOGICAL INVESTIGATIONS OF THE BROAD CREEK BLOCKADE: 1990 AND 1991 FIELD SEASONS
Unknown Schooner 3	Roanoke River	1864	ABANDONED	Yes	Yes	0	0	0	0	*W.H. Macomb to Rear Admiral David D. Porter, Nov. 14, 1864, Official Records of the Union and Confederate Navies, Series I, Volume 11, (Harrisburg: Historic Times, 1987), 65.

NAME	AREA	LOSS YEAR	CAUSE	RESOURCE	WAR LOSS	LENGTH	BREADTH	DEPTH	G. Tonnage	REFERENCES
Unknown Schooner 4	Roanoke River	1864	ABANDONED	Yes	Yes	0	0	0	0	*W.H. Macomb to Rear Admiral David D. Porter, Nov. 14, 1864, Official Records of the Union and Confederate Navies, Series I, Volume 11, (Harrisburg: Historic Times, 1987), 65
Unknown Schooner 5	Roanoke River	1864	ABANDONED	Yes	Yes	0	0	0	0	*W.H. Macomb to Rear Admiral David D. Porter, Nov. 14, 1864, Official Records of the Union and Confederate Navies, Series I, Volume 11, (Harrisburg: Historic Times, 1987), 65
Unknown Schooner 6	Roanoke River	1862	ABANDONED	Yes	Yes	0	0	0	0	*REPORT OF THE CHIEF OF ENGINEERS, 1875? P, 64
Unknown Schooner 7	Roanoke River	1862	ABANDONED	Yes	Yes	0	0	0	0	*REPORT OF THE CHIEF OF ENGINEERS, 1875? P, 64
Unknown Schooner 8	Roanoke River	1862	ABANDONED	Yes	Yes	0	0	0	0	*REPORT OF THE CHIEF OF ENGINEERS, 1875? P, 64
Unknown Scow 1	Roanoke River	1860	ABANDONED	No	No	0	0	0	0	*Charles G. Manning, letter to Sec. Treasury Custom House Edenton, 28 September 1870;
Unknown Scow 2	Roanoke River	1860	ABANDONED	Yes	No	0	0	0	0	*Charles G. Manning, letter to Sec. Treasury Custom House Edenton, 28 September 1870;
Unknown Skiff	Roanoke River	0	ABANDONED	Yes	No	14.2	4.258	0	0	*Investigated 14 June 2005 during ECU Field School
Unknown Tug 1	Roanoke River	1874	WRECKED	No	No	0	0	0	0	*Report of the Chief of Engineers, U.S. Army Corps of Engineers, 1874 p.64:
Unknown Vessel	Roanoke River	1865	WRECKED	Yes	Yes	0	0	0	0	*Site File *Paul H. Silverstone, Warships of the Civil War Navies, p.209. *W.H. Macomb to S.P. Lee September 7, 1864, Official Records of the Union and Confederate Navies, Series I, Volume 11, (Harrisburg: Historic Times, 1987), 65
Unknown Vessel 2	Roanoke River	0	ABANDONED	Yes	No	127.6	29.8	0	0	
Unknown Vessel 3	Roanoke River	0	ABANDONED	Yes	No	117.9	38.5	0	0	
Unknown Vessel 4	Roanoke River	0	ABANDONED	Yes	No	52.7	24.6	0	0	
Unknown Vessel 5	Roanoke River	0	ABANDONED	Yes	No	121.3	23.6	0	0	
Unknown Vessel 6	Roanoke River	0	ABANDONED	Yes	No	148	22.8	0	0	*"ROR0025" Nathan Henry, NC UAB, 26 July 2007.
Unknown Vessel 7	Roanoke River	0	ABANDONED	Yes	No	12.5	4.1	0	0	
Unknown Vessel 8	Roanoke River	0	ABANDONED	Yes	No	136	28.1	0	0	
Unknown Vessel 9	Roanoke River	0	ABANDONED	Yes	No	89.6	20.9	0	0	
Vesta	Roanoke River	1879	WRECKED	No	No	0	0	0	219	*The Sun, "Telegraphic Summery, Etc.," p. 1, vol. LXXXV, issue 99, 9 September 1879, Baltimore, MD. *Annual List of Merchant Vessels of the United States, United States Department of the Treasury, Bureau of Statistics.
Windlass Wreck	Roanoke River	1864	ABANDONED	Yes	Yes	0	0	0	0	*ARCHAEOLOGICAL INVESTIGATIONS OF THE BROAD CREEK BLOCKADE: 1990 AND 1991 FIELD SEASONS

NAME	AREA	LOSS YEAR	CAUSE	RESOURCE	WAR LOSS	LENGTH	BREADTH	DEPTH	G. Tonnage	REFERENCES
Bridge Boat	Scuppernong River	0	ABANDONED	Yes	No	25.2	8.6	3.5	0	*Wilde-Ramsing, 1990
Columbia Flat Barge A	Scuppernong River	0	ABANDONED	Yes	No	54.5	12	4.5	0	*Wilde-Ramsing, 1990
Columbia Flat Barge B	Scuppernong River	1959	ABANDONED	Yes	No	62	20.5	0	0	*Wilde-Ramsing, 1990
Columbia Shad Boat	Scuppernong River	0	ABANDONED	Yes	No	20	0	0	0	*Wilde-Ramsing, 1990
Columbia Skiff	Scuppernong River	0	ABANDONED	Yes	No	17	0	0	0	*Wilde-Ramsing, 1990
Estella Randall	Scuppernong River	1910	WRECKED	Yes	No	111.5	24.9	7.2	211	*United States Treasury Department, 1909 *Berman, 1972 *Charles, 2004 *Site File *Department of the United States Treasury, 1904:223
Lawrence	Scuppernong River	0	UNKNOWN	Yes	No	64	15	4	34	*Certificate of Enrollment, n.d. *Site File
Marguerite	Scuppernong River	1933	UNKNOWN	Yes	No	99	20.5	6.8	86	*United States Treasury Department, 1930 *Berman, 1972 *Charles, 2004 *Site File