PARADOX ON THE BLACKWATER RIVER:
THE HISTORY OF AN UNKNOWN SHIPWRECK

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The research for this thesis began after a brief site survey during the 2011 summer fieldschool when I joined a small group of students to practice mapping a shipwreck. Though the conclusions are from my research, there were many individuals who made the collection of this data possible.

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ABSTRACT

PARADOX ON THE BLACKWATER RIVER: THE HISTORY OF AN UNKNOWN SHIPWRECK

Marisa Lee Foster

In order to test the hypotheses about the history of the Swingbridge wreck, the construction of the wreck was referenced to literature written on different types of ships. In Northwest Florida the history of ship types used on the Blackwater River during the nineteenth century and the history of the area were researched. The condition of the wreck was examined to conclude the type of destruction the ship received and whether or not it was intentional. To do this a team of students excavated the structure using traditional archaeological methods along with incorporating the direct survey method. Artifacts were collected and conserved in the University of West Florida’s archaeology lab. The results from this research have shown that the vessel was most likely a schooner. The use history is undetermined based on the findings. The vessel does have burnt timbers which could suggest the incident from Lieutenant Colonel William K. Beard’s raid in 1862 or an owner simply disposing of an abandoned ship.
CHAPTER 1
INTRODUCTION

The historic lumber industry located along Blackwater River was the cornerstone to the development of the towns of Milton and Bagdad in Santa Rosa County, Florida. Originally formed during the 1820s and 1830s, the small Blackwater settlement stretched from the mouth of Clear Creek to Pelican Bayou (Green 2004; Grinnan 2013; Rucker 2005). The settlers utilized the rich forest for its timber and would send the logs down the river to be milled. The town of Milton was originally established as a mill town because of the profitable production of timber. Previous research on the history of the Blackwater River area has focused on the Arcadia Sawmill, located in northwest Florida, west of Milton. The Arcadia Mill site has provided a wealth of information about the lumber industry, planing mills, brick yards, textile mills, shingle mills, rock quarries, bucket factories, and silk cocoonery (Grinnan 2013; Phillips 1997; Rucker 2005). Less well-known are the ships used for trade and other industrial employments, which provided some of the missing information that can help explain the routes taken along Blackwater River and what cargoes the ships were carrying.

The focus of this thesis is on the historic lumber industry located in Milton and Bagdad, Florida, and the function of ships used for this trade in the Blackwater River. My interest in this topic stems from the 2012 summer’s brief research by the University of West Florida’s (UWF) Anthropology Department. They researched a shipwreck located in the Blackwater River that has been named the Swingbridge Wreck (8SR1488) because of its location next to the swinging bridge in Milton (Franklin et al 1992: 180). The wreck is located just south of the Southern States Railroad Swingbridge in Milton and is adjacent to Marquis Basin, positioned on the shore opposite of the city.
The Swingbridge Wreck site is one of thirty-four shipwrecks recorded by the 1991 Pensacola Shipwreck Survey. The wreck was discovered during a pilot study for the long-term management plan of submerged cultural resources by Florida’s Bureau of Archaeological Research in January of 1991 (Franklin et al. 1992: iii-iv). Pensacola Bay and surrounding rivers were chosen because of the high number of locally recorded shipwrecks. The survey focused on diagnostic features, dimensions, hull remains, and any future threats to the wreck sites. The team completed their survey with future recommendations before having their findings published in the *Florida Archaeological Report* (Franklin et al. 1992; Raupp 2004). Further work on the Swingbridge Wreck did not begin until the 2010 UWF fieldschool entered the Blackwater River after the Deepwater Horizon oil spill forced relocation upriver from Pensacola Bay. Among other research areas, the students began recording the hull structure and drawing a site plan. In 2011, the UWF fieldschool returned to the site for a few days briefly to inspect the site and lay a baseline offset to practice mapping. It was not until 2012 that excavation began.

I chose this shipwreck because I believe that there are multiple variables that connect the use of ships and other means of river travel to the growth of the lumber industry and the towns that develop around it (Grinnan 2013; Sams and Phillips 2009). I hypothesize that this shipwreck is a schooner. The schooner had multiple vocations during the nineteenth century. Schooners could traverse up and down Blackwater River with ease, and because of their larger size they were able to sail in the open ocean. The ambiguous function of this particular wreck could point in the direction of the fishing industry, but with the evidence found during the 2012 UWF fieldschool and location of the wreck, it seems unlikely that such a vessel was employed for this purpose. However, with the increase of the fishing industry in Pensacola during the late nineteenth century, there would be a need for larger ships to increase the carrying capacity.
While visiting the Arcadia Mill open house in 2011, I was able to interview two local historians, Nathan Woolsey and Dr. Brian Rucker. I was introduced to both historians by John Philips, an archaeologist employed through the Archaeology Institute at the University of West Florida. Woolsey stated in an interview that it was unlikely for fishing vessels to have traveled that far up river (Personal Communication 2012). Based on the research completed by Jason Raupp, who researched a fishing vessel known as the Snapper Wreck located downstream of Pond Creek near Bagdad, the fishing industry did not begin until after 1880 (Raupp 2004).

The purpose and cargo of a ship can be very difficult to discern, especially when researching schooners because of their multiple usages. Events can also play a major role in discerning the history of a vessel. A series of events that occurred around Blackwater River during the nineteenth century resulted in the present day development of such towns as Milton and Bagdad. For example, Beard’s Raid during the Civil War caused massive destruction and alterations to the development of industries after the war. Hurricanes are other events that can destroy property and bankrupt industries. I was interested in discerning the identification of the Swingbridge Wreck to add to the already rich data collected on Blackwater River. Through the research on this particular wreck, I constructed a history of this vessel and connect it to the history of the broader region in which it was situated. The area that I looked at is the Blackwater River region located by Milton, just north of Bagdad. I focused on the route lumber was sent along when traveling down the river to various mills. I researched the locations of the different mills and construct a map that will show where each was located before and after the Civil War.

The towns of Milton and Bagdad were the major hubs for the lumber industry during the nineteenth century. The Bagdad mills were considered to be the largest industrial complex in Florida during the nineteenth century; it was also the location of a very large shipyard, Ollinger
and Bruce (Rucker 2002; Woolsey 2011). The C.P. Knapp and Dycus Company and the Keyser, McVoy and Company were located across from each other in Milton, and they each owned schooners for transportation of lumber. The only industry located further north from Milton was the Mortonia mill owned by Jackson Morton (Rucker 2002).

Another aspect that played into the location of the Swingbridge wreck was Lieutenant Colonel William K. Beard’s raid in 1862. Beard traveled up and down the Blackwater River in this Civil War raid, destroying all property and mills that were along the way to prevent any Union soldiers from having access to the materials. There are detailed accounts of the materials and buildings destroyed by his actions. The furthest north he went on Blackwater was to the Mortonia Mill before he doubled back and heading into Escambia Bay. Based on the record of Beard’s raid from Dr. Rucker, Morton did not have any ships located at his mill, and none were destroyed during the raid (Rucker 2002: 9; Woolsey 2011). This makes it more likely that the wreck belonged to a mill in Milton or Bagdad. If the Swingbridge Wreck was functional before the raid, it would have signs of burning, which it does. If the ship was abandoned before the raid, it is possible that Beard ignored it. Since they were in a hurry, it is possible that they would not mention an abandoned wreck.

The Civil War is important to this project because the effects of Beard’s raid had a pronounced influence on the ways in which industry would function after the war. To answer the questions pertaining to the Swingbridge Wreck, I gathered as much information as possible to piece together how the industries tried to put themselves back together after such destruction. The railroad had a lot to do with how the industry quickly increased production and what industries were able to rebuild and which were not. The railroad, the war, and the industry’s ability to rebuild all helped reconstruct the history of this wreck.
My aim for this thesis was to observe the roles of the lumber industry as it was used in Milton. The use of the Bagdad port and transfer of yellow pine was the major function of the lumber industry to cause the town and surrounding area to grow. Coastwise schooners were an excellent source of transportation. The Swingbridge Wreck sits by railroad tracks, which brings about questions concerning locomotion during the nineteenth century. These are the hypotheses I addressed during the beginning stages of my research:

1. The wreck is a schooner:
   a. Were schooners employed in the area?
   b. What types of ships were used during the nineteenth century?
   c. How is a schooner identified?

2. The wreck was used during the lumber industry to transport lumber:
   a. Were there artifacts on the ship?
   b. How is a lumber vessel identified?
   c. Where were lumber mills and shipyards located?
   d. Is there any correlation between locomotion and ship in this area?

3. The wreck sank during the Civil War as a result of William Beard’s raid:
   a. Was the ship tied to a dock when it sank?
   b. What was the name of the docking structure that surrounds the area and was it a wharf or shipyard?
   c. Who owned the ship?

With the introduction of the railroad, further questions can be raised that there were many wharfs and docking structures abandoned, but the ships had to go somewhere. New industries were developing in the late nineteenth century, which required sailing vessels, such as the fishing industry. There is a great deal of information missing on the immediate results after the Civil War, which leaves the events of the time open for debate and speculation. These hypotheses pose difficulty in being tested because so much information was lost during the frequent floods and fires that plagued the town of Milton in the years following the war.

The purpose of these hypotheses is to establish an understanding of the shipwreck located in the Blackwater River. There is evidence of a docking structure that extended around the side and up a small inlet only to come back down the other side and continue up the river. The
archaeological remains suggest considerable activity near the railroad tracks, which could have been built before or after the train was introduced. The function of the railroad in the area was limited before the war because of insufficient funds and labor to construct such a massive track. The location was another hindrance; the marshlands provided poor stability to lay tracks.

The purpose of the ships employed for lumber transportation is important for discerning the types of vessels used, how they were used, and where they would travel to. The centerboard schooner would have made an excellent ship for transporting lumber, because the function of the centerboard allows the ship to traverse into shallow waters, while being able to maneuver in deep waters as well. Storage on ships was important for moving lumber as well as the pack animals available to transport lumber across land. In the North, lumber would be transported during the winter time because the frozen ground made it easier for the oxen to pull the carts. The South had to employ a different tactic; river systems provided an easier way to move large amounts of lumber to the desired destination faster than navigating the terrain with pack animals.

The major research topics for my thesis revolves around a brief history of southern sawmills in the most general sense. A more detailed focus will be the sawmills in Milton, Florida. I located old maps or images of the area around the wreck to grasp a better understanding of the site and how the docking system used to be in place. The history of Milton and Bagdad is rich with information about the development of the town and the types of industry present during its development. With the help of the Santa Rosa Historical Society, I obtained information on the history of Blackwater River and the towns that are along it. The Arcadia Mill site provided an abundance of information about the history of the mill and the technology used for transporting lumber. There has been no confirming data presented on the wreck, which allows for numerous hypotheses to be presented. My suggestions are only one of many possible
truths behind the history of this ship. Through the information gathered from collections, archives, and any materials provided by the historical society and Arcadia, I evaluated my hypotheses. Before describing the history surrounding Milton and Bagdad, this next chapter will give a brief description on the differences between northern and southern lumber companies. This chapter will explain why the towns of Milton and Bagdad were pivotal.

The third chapter highlights the history of Milton and Bagdad. This chapter gives a chronological history of how Santa Rosa County formed and the events that took place before, during, and after the Civil War. The war is important to explain because my main hypothesis is that Lieutenant Colonel William K. Beard was responsible for the burning and sinking of the Swingbridge Wreck. The information following the war is to explain the research opportunities and information available for my analysis.

The fourth chapter describes the theoretical context related to the field of Maritime Studies and how I approached the Swingbridge Wreck. I review three theories that have lead archaeologists to the method of research conducted today. Chapter five and six discuss the intricate details to how the excavation of the Swingbridge Wreck was carried out and what was found. These chapters outline methods and techniques used to construct a site plan and record an underwater shipwreck. There are many possible techniques to employ when excavating a site; these chapters only discuss the methods I used. The last chapter is the conclusion, and it is a summation of the 2012 fieldwork and subsequent lab work.
CHAPTER 2

HISTORY OF THE LUMBER INDUSTRY IN NORTH AMERICA

The lumber industry played a key role in fueling the increased production and development of the United States from the seventeenth to the nineteenth century. Wood was used for housing, furniture, fuel, ship construction, and trade commodities being shipped overseas. The use of wood was essential to everyday life; it was abundant, universal, and inexhaustible (Panshin et al. 1962). The use of lumber allowed protection from indigenous peoples, warmth from cold weather, weapons for defense, material for repairing ships, and furniture for housing. Timber was pivotal in humanity’s evolution towards a civilized environment. As long as there was timber available, there would be individuals living around an area; when the wood was gone, so were the inhabitants. It was not until the invention of the railroad that forests and prairies were connected so individuals could travel easier to inhabit both (Baugh 1997; Panshin et al. 1962).

When European explorers first reached the shores of the New World, they were in search of gold and other materials useful for trade and profit in their homeland. Upon arrival, what they found was a lot of trees, which became some of the earliest exports from the New World to the Old World (Defebaugh 1906; Panshin et al 1962). Products of the forest became a form of currency as well as materials for survival. Explorers and immigrants had to create a safe environment to protect them from the natives and from weather conditions. They had to construct everything they could not obtain from the natives by means of trade or force. The precious value of wood was useful to the development of future towns and outposts for trade. The forest provided shelter and fuel.
The lumber industry can be tied to the evolution of European migrations following humanity’s movements throughout the Americas (Defebaugh, 1906; Horn n.d.). As early as 1000 A.D., though this is heavily debated, there were accounts of Leif Ericson cutting down trees and shipping them back to Greenland. And in 1347 A.D. there was another account of a shipwreck that had occurred while on its return voyage to Iceland with a cargo of timber (Horn, n.d.). The settlers on American shores became the first American lumbermen out of necessity. The majority of individuals chose to be a lumberman, shoemaker, carpenter, and weaver to survive (Defebaugh 1906). Though the trees were used for settlements and other items needed for survival, one of the real benefits timber provided in the early development of settlements was materials for ship construction. Noticing the length and strength of timbers, settlers shipped many excess timbers back to the homeland to be used for masts and other scarce ship materials. Shipping timbers became very important as commercial cargoes (Baugh 1997; Horn n.d.).

Though exploration and migrations overseas had been taking place since the twelfth century, the future North America had remained mostly unknown until the seventeenth century. Forests covered nearly half of the future United States, with a rough estimate of about 1,400,000 square miles excluding Alaska (Defebaugh 1906; Panshin et al. 1962). The rest of the area was covered with mountains or plains. The forests contained white and yellow pine, an easily worked wood when compared to the forests of the semi-tropics. The lumber industry was one of the first industries to form in future North America, but the areas where it was most developed was in the northeastern coast and in the Maritime and Laurentian provinces in Canada (Panshin et al 1962). The areas of St. Augustine and Florida participated in the lumber industry; however, it was nowhere near an international trade during the seventeenth century (Horn n.d; Panshin et al 1962).
Professional American logging began during the colonial era in northern New England; here they would take advantage of the cold weather where the frozen, snow covered ground allowed easier transportation of heavy log from the forests and swamps. The lumbermen would work in logging camps from late October to March or April. When the ground began to thaw, they would use the rivers to float the logs downstream to sawmills (Tomczik 2007). Around 1885, the industry began to shift to Michigan, Wisconsin, Minnesota, and eventually into the Pacific Northwest. The railroad would ultimately replace the need for river drivers, making the transportation of lumber easier and faster. The role of the lumber industry in the northern portion of the United States was extremely different when compared with the South. According to Adam Tomczik, “lumberjacks awoke in the camp, ate their daily meals at the cook shack or in the swamps, whiled away their few hours of leisure in the bunkhouse, and retired on a shared bed of straw or balsam boughs; their food, labor, recreation, and sleep were all components of the same all-encompassing experience” (Tomczik 2007: 699). Lumberjacks in the North functioned as a separate family; they were secluded for long periods of time with the same men. They held their work with great respect, living and working with the same men created a community where they could come together and work with pride. The men would cut the logs and load them onto carts pulled by oxen. These carts would transport the logs to an area for future transportation when the spring came.

The lumber industry in the South consisted of trading and shipping the wood to Europe. The French invaded the southeastern part of America in the late seventeenth century. They colonized Louisiana and exploited the pine forests for use in building materials and fortifications. Once the French had established a stronghold, they turned their attention towards using the wood for ship construction and trade. The French traded with Spanish America, using wood as
currency for imported items. The lumber industry began to develop during the French occupation. After a series of revolts from the indigenous population, along with the Seven Years War, the inhabitants of New Orleans finally took back Louisiana (Moore 1967). The period of development for lumber mills in the South was characterized as native seasonal workers, contract work, and relatively small mills (Drobney 1966). The first sawmills constructed were in the 1700s to provide lumber for local British and Spanish needs; it was not until the end of their occupation that a true lumber mill could be constructed to provide for the surrounding area.

The northern and southern lumber industries functioned very differently in the nineteenth century, and two areas that exemplified this include the workforce and how the lumber was transported. In the North, workers were white males working in a secluded group separated from the rest of the community. They mainly worked during the winter months because it was easier for the oxen to haul the timbers over the ice covered roads. There, the workers lived in bunkhouses and survived in their own separate community. In the South, however, the sawmills functioned year round, which made it difficult to provide enough labor. The majority of workers were African American laborers who lived in their homes or boarding houses. They were able to travel to and from their house for lunch; there was no need for a cookhouse because they were not secluded from the rest of society (Drobney 1966; Horn n.d.). The logging companies were not nearly as large as they were in the North, and many produced smaller loads of lumber. Money was always a problem for the North and South; even if the companies did not have to pay the workers, they still had to pay for them.

A case study of the logging industry in West Virginia was conducted by Janet Brashler (1991), who focused on the gender roles that took place in the organization of lumber companies. The lumber industry in the South was very different than the lumber companies formed in the
north, as mentioned above. Wage laborers and slaves were able to remain around their families. In West Virginia, men would move with their families to areas of new development in the hopes of finding a better place to live. Newly developed lumber industries advertised articles about the opportunities that awaited all those who came to live there (Brashler 1991). There was mention of abundant fishing and hunting, trade networks, and untouched land. The magazines or articles detailed the advantages of settling in new areas and what was needed or would be expected of those who did. It was a type of “how to” guide for anyone interested in a new start.

The families that chose to move faced a different type of lifestyle. Men labored for the lumber industry and expanded their networks of trade for the company as well as the family. Women took on the household tasks of cooking and cleaning, but they would also take on some of the lighter tasks obligated for the lumberjacks. Women could partake in working for the lumber industries, but they would be considered only a small part of the entire company and only work on things that women were expected or allowed to work, such as cooks or tend to the animals. In West Virginia the waterways were not navigable, so pack animals were the major source of transportation for the lumber.

Since most the local laborers maintained a farm as well as working for the lumber companies, pack animals were easy to come by. The main incentive was wage labor for those who were not slaves and increased trade through the productions created through the industry. The major shift in this process was after the Civil War. The area of West Virginia began to expand, and with the increase in trade and more land being needed for the lumber industry, farmers were slowly changed into landlords who were heavily reliant upon an income (Brashler 1991).
The technology that surrounded the use of lumber mills helped give rise to the growing economy that it produced. For the local inhabitants, it would be surprising to see strangers move into the town with all this heavy equipment such as chains, pulleys, pack animals, blades, saws, et cetera. They would also be arriving by ship, since a railroad was not yet developed. The surrounding area of woods would become desolate and the noise from the mill would fill the air. To the inhabitants, it would be like the circus was coming to town, except the outsiders were staying for good. The entire area would begin to change and the people native to the area had to adapt or be forced out. In some cases there was work required for the mill and the local residents would either be forced or paid to work. By becoming employed by the new arrivals, there would be a heavy influx of pressure and influence being placed on the individuals new to the mill. In the South, since they were able to stay at home, they would take their experience back to their families. This would gradually alter the original lifeway’s of the people as well as the surrounding area (Brashler 1991).

The use of sailing vessels to transport lumber from up and down river to distant places in another state created a connection that helped expand the production and influence of the lumber industry. Sailing vessels were used for lumber shipping, fishing, exploration, and many other trades. The use of sailing ships to transport lumber provided quick and efficient means of delivery. With so much timber available in the United States during the nineteenth century, ships were being constructed regularly for the purpose of river travel and trade (Chapelle 1988). In regard to the lumber industry, lumberjacks would hand saw the pieces needed for the ships. They would use the adze, broadaxe, and plane to work the wood, and the work was very tedious and labor intensive. With such a specialized skill and precise techniques needed, the sawyer quickly became a specialized trade (Chapelle 1988).
The schooner was the most practical vessel to transport lumber up and down the river. The centerboard schooner was the most efficient vessel in the river and provided easier access in shallow waters. The centerboard is a device that acted as a type of fin below the hull (MacGregor 1997; Steffy 1994). It was used as a stabilizer, having the ability to raise and lower the fin. The centerboard was located in the center of the ship. Schooners used for hauling lumber would have a gaping aperture built into the port bow of the vessel for easier access to load and unload the lumber. It was expensive to rig a special pulley crane on a ship for transporting the lumber on and off. By incorporating this aperture, the workers could use pack animals to drag the lumber out of the ship (MacGregor 1997).

The introduction of the railroad into the area caused pack animals to become less important (Brashler 1991; MacGregor 1997). Trains were able to send in materials and food needed to support the area, and this left the population able to develop companies and expand the area without the heavy reliance upon producing their staple diet. The introduction of the train also increased the flow of outside influence. As the industry grew, coupled with the development of the locomotive, people were able to come and go freely to the area for business reasons, vacation, et cetera. Trade goods influenced people’s interests and desires, but actual contact with those people increased the rate of influence and opened the area to multiple forms of interpretation and change.

As the lumber companies became more industrialized and with a higher dependence upon wage labor and income, men would often spend more time away from their families and longer in lumber camps to increase their income. Young men and boys would work with their fathers. Young women and girls would work with their mothers. The farm was becoming obsolete, and in response there was an increase in the women’s presence in the lumber camps. Women would
work as cooks. They also helped with the logging enterprise by foraging, driving the supply wagons, or even driving teams of horses being used for skidding logs (Brashler 1991).

As the lumber industry continued to function as a primary focus for development, more sawmills and lumber camps were created. In the late nineteenth century, the southern states turned their focus towards lumber production. Lumber production in America, and especially southern America, was based on local lines. The lumber was relatively close to the actual mill where they were cut and distributed. The major function of lumber was for building houses and the development of towns (Horn, n.d.). As the towns grew in size, so would the consumption of the timber around the area. When new towns were established, there would need to be a sawmill in a relatively close proximity to distribute the materials needed to continue building.

Towns and whole communities were established around the growing lumber industry in the South. While the Northern lumber industry brought the processed lumber to the desired location, the entire practice of removing the raw material and handling it was kept separate from towns and communities. Though extremely important, the lumber industry in the North was not directly tied to the location its workers came from. In the South, however, the lumber industry was in the direct vicinity of the town and it had a direct effect on the lives of all who lived there. For this reason, the towns of Milton and Bagdad suffered and prospered greatly based on the industries they employed.
CHAPTER 3
HISTORY OF MILTON AND BAGDAD

The development of the logging industry in northern Florida and southern Alabama stemmed from the need for a lumber company to be closer. The nearest location was in New Orleans, and the cost as well as the labor needed to ship from such a distance was impractical. The immense availability of pine and access to rivers made Florida, especially Pensacola, very advantageous for supporting sawmills (Department of Scientific and Industrial Research 1945; Rucker 1990; Sams and Phillips 2009). During the nineteenth century, oxen and horses were used to transport the logs to their destination. In some cases it was too difficult for the animals to travel, and it was much quicker to send the logs down the river (Appleyard 2006). The connecting waterways allowed the loggers to send the timbers down the river to the actual sawmill.

Extensive Euro-American migration into Florida did not progress until 1814, when Andrew Jackson invaded Spanish controlled Florida (Manuel 2004; Rucker 1990). Jackson pushed back the Indian inhabitants from the area, which allowed settlers a stable location to begin developing homes and growing crops. The second invasion, in 1818, cleared more area for settlers to migrate into Northwest Florida. The settlers were migrating principally from Alabama, Georgia, and the Carolinas, and were generally settling along the Escambia River. Those who settled along the eastern shore of the Escambia River would be known as the first settlements of what was to become Santa Rosa County in 1842 (Coker and Parker 1996; Rucker 1990).

Though Jackson expelled the Indian inhabitants to make room for the American settlers, the Spanish still ruled in Florida. José Callava remained governor of West Florida until 1821. Callava believed the American settlers would provide food to Pensacola’s market. The settlers
were growing rice, corn, beans, tobacco, and cotton, and were also herding cattle and hogs. The census collected by an officer of Callava’s reported “72 homesteads totaling 380 whites and 73 blacks. The majority of these families were from the United States and Scotland” (Rucker 1990: 49). The fate of Florida changed after the Adams Onis Treaty in 1819, also known as the Transcontinental Treaty. The treaty was between the United States and Spain, which gave Florida to the U.S. and set out a boundary between the U.S. and New Spain (now Mexico). In 1821 Andrew Jackson declared Florida to be part of the United States. After the American acquisition of Florida, the territory was then divided into two counties, Escambia County and St. Johns County (Coker and Parker 1996; Manuel 2004; Rucker 1990). Escambia County encompassed everything west of the Suwannee River and St. Johns County encompassed everything to the east. Those who settled to the east of the Escambia River were considered to be at a higher risk of native interaction, because that land was considered primal (Coker and Parker 1996). From 1822 until 1842, Pensacola served as a county seat in all legislative meetings that were held to decide the continual expansion and separation of counties within territorial Florida. 

Transportation along the Escambia River was very crude; mud trails carved out for horse drawn carts, flatboats, keel boats, and rafts were constructed to transport items down the river. The further east one traveled, the more primitive life became. The area of focus for this project is the “Blackwater Settlement,” which spanned from the mouth of Clear Creek to Pelican Bayou (Green 1998; Rucker 1990). Though the area around Escambia River began growing in the early 1820s, it was not until the late 1820s and early 1830s that the area of Blackwater really began to develop. What became the town of Milton was a great site to float logs because of its natural location for landing lumber. Saw mills began developing in west Florida and the rich forests of long leaf yellow pine and cypress trees were ideal for harvesting.
Local history surrounding Milton and the Blackwater River describe the area as a heavy lumber producer (Green 1998; Rucker 1990; Woolsey 2011). It was a common theme for developing lumber settlements to be referred as “Mill town,” and then later consolidated into the town’s name, “Milton.” Benjamin and Margaret Jernigan were among the pioneering settlers of the Blackwater Bay area in the early 1830s; they developed the settlement’s first industry—a water powered sawmill (Green 1998). This may have propagated the origin of the town’s name Milton, Florida, in 1839. Another possible origin to the town’s name has been proposed to be from a man named Milton Amos, a pioneer who has descendants in Milton today (Green 1998; King 1972). The town continued to grow as a result of the plentiful longleaf yellow pine and cypress forests. The convenience of Blackwater River provided excellent transportation of lumber. Working locals would refer to the area as “Scratch Ankle,” due to the briars that grew along the river (Green 1998). Excellent access points existed for many ships to travel up and down with trade goods.

The longleaf yellow pine and cypress timbers located in the area of Milton and Bagdad provided ample lumber to be shipped out to New Orleans and other ports in South Florida (Franklin et al 1992; Green 1998). The town of Bagdad was established 1842 after being named by Joseph Forsyth. The town was named after the Middle East town in Iraq (King 1972). Many ships used for transporting the lumber were schooners. A schooner is a type of sailing vessel with fore-and-aft sails on two or more masts, the foremast being no taller than the rear mast (Hocker and Ward 2004; McEwen and Lewis 1953: 480; Steffy 1994). The coastwise schooner was preferred because of the economical affordability they had over steam engines. Lumber was sent down river as log rafts until they reached the bay; there they would be loaded onto merchant vessels to be shipped to their place of destination (Franklin et al 1992; Green 1998).
Water transportation was the cheapest and most efficient means of travel. The Blackwater community extended from John Hunt’s brickyard at the head of Blackwater Bay to Jackson Morton’s brickyard at the junction of Clear Creek with Blackwater River (Rucker 1990). The Blackwater River provided a strategic location for river travel and overland routes, which intrigued settlers to continue to inhabit the area. Jackson Morton, a very influential individual in the Santa Rosa area, noted that “the lumber may be rafted from the mill door to the lumber landing on Blackwater” (Rucker 1990: 156). Tributaries to Blackwater were Coldwater Creek, Big Juniper Creek, and Pond Creek. Coldwater and Big Juniper attracted many frontier entrepreneurs because of the construction of mills due to the abundance of the pine forests. By 1840 numerous mills had been erected along the river. Many of the mills were owned by families including David A. McDavid, William B. Gaines, and John McArthur (King 1972; Rucker 1990; Woolsey 2011). The economic growth that sprouted on Pond Creek was by far the largest in the area where Forsyth and the Simpson brothers were developing the saw mill in Arcadia.

The development of Arcadia stems back to Spanish rule, when the King of Spain made a cession of land to Juan de la Rua (Drobney 1966; King 1972; Rucker 1990; Sams and Phillips 2009). The land was located three miles upstream on Pond Creek, which was above Bagdad and Arcadia. Construction of a mill began in 1828, but he had many troubles with keeping labor because of Indian threats. In the same year la Rua passed the title on to Joseph Forsyth, who began construction on a water-powered saw mill. Forsyth struggled with the same troubles as la Rua, he could not provide enough capital to keep up with the labor requirements.

During the antebellum period typical logging operations remained close to navigate streams and waterways. The Arcadia tract itself was well timbered, but during this early period mill owners regarded timber on public lands as free for the taking. Several methods of logging were used. Mill owners at times purchased logs that were delivered by contract loggers to the mill site. In other cases, slaves were hired or purchased for
tree cutting. Accompanied by white overseers and other white loggers, slaves were generally required to cut a minimum of ten logs per day. If a black lumberman cut over this amount, he would be paid accordingly and allowed to keep the money for his own use. [Rucker 1990: 175]

In 1830 he met two gentlemen from North Carolina, Andres and Ezekiel Simpson. The two brothers became joint partners with Forsyth, which provided enough capital to keep the mill running (Grinnan 2013; King 1972; Sams and Phillips 2009; Willis et al. 1992).

In 1831, plans were developed to begin a Bank of Pensacola, which would support the future construction of the Alabama, Florida, and Georgia Railroad. Irish workers arrived with railroad equipment in 1834 to begin construction. The railroad company and the bank were unable to continue funding the construction and both failed, causing a huge panic and disruption within the economy (Appleyard 2003; Willis et al. 1992). By 1838, there were three railroads in the state of Florida, but only two were in use. Forsyth and Simpson built a small, three mile long railroad, the Arcadia and Blackwater Railway, which travelled from Arcadia mill to the docks on Blackwater River. The railroad was constructed out of wood with iron facing and was pulled by mules (King 1972; Sams and Phillips 2009). The Arcadia and Blackwater Railway only lasted for a few years because the heavy lumber wore away at the rails. To combat the difficulty in transporting such large logs, they decided to construct another mill on the waterfront. This mill would be powered by stream because the brackish water would not function properly within the boilers. A new stream had to be created about a mile from the new mill. The mill was constructed in 1840 adjacent to the town of Bagdad (Grinnan 2013; Sams and Phillips 2009; Willis et al. 1992). Santa Rosa county “continued to prosper, spurred on by the vigorous business activities of individuals such as John Hunt, Jackson Morton, Joseph Forsyth, and Ezekiel Simpson, the Blackwater River basin became the scene of diversified industrial projects—sawmills, brickyards, stone quarries, shipyards, a railroad, internal improvements, and plans for
future manufactures” (Rucker 1990: 203). After Forsyth’s death in 1855, the Simpson and company was created to incorporate some new individuals who would continue to see the area of Blackwater grow.

At the center of this flourishing lumber industry was a community referred to as the “Black Water settlement,” which would later be known as the towns of Milton and Bagdad (Rucker 1990). There was a slight fear from Pensacola that this area would eventually begin to take away from their economic stability. The whole Santa Rosa area was continuously growing during the 1830s, and the introduction of shipyards only increased the prosperity within Blackwater. Captain John Gardner established the first shipyard in Shipyard Point around 1833 (King 1972; Rucker 1990; Willis et al. 1992). After Captain Gardner’s death in 1837, his wife remarried Henry B. Farley, who continued to operate the shipyard until 1853, when he sold it to Joseph Forsyth (King 1972; Sams and Phillips 2009; Willis et al. 1992). The area was used to house schooners and the sash factory.

Bagdad was supplemented by the industrial growth provided by the Ollinger and Bruce firm. William Ollinger and Martin Bruce formed a partnership and built a small repair plant and marine railway in the town of Bagdad in 1858 (Rucker 1990; Willis et al. 1992). They originally only had plans to create a ship repair facility and marine railway along the Blackwater River, but decided to expand on those plans and build a floating dock (Rucker 1990). By 1860, the first floating drydock was completed. The dock had a 500-ton capacity and was built out of yellow pine. Three pontoons supported the structure and had to be anchored to the river bed. This floating dock was perfect for supplementing the small coastwise schooners that transported lumber from the adjacent lumber mill in Bagdad to the different locations of trade.
As Bagdad continued to grow and prosper, the development of a Navy Yard and military forts were also under construction. From 1825 to 1859 four forts were constructed: Fort Pickens, Fort McCree, Fort Barrancas, and the Advanced Redoubt (Manuel 2004). The purpose of these forts was to suppress slave trade and prevent acts of piracy (Sutton n.d.). The threat of yellow fever inhibited the construction of the forts. New cases of yellow fever were unremittingly being brought to the shores of Pensacola via cargo ships. The blame was placed on unsanitary conditions and rotting fish (Manuel 2004; Robinson 1991). The Navy Yards constructed a United States Naval Hospital to help with the persistent outbreaks. Attempts to control the outbreak were fraught with problems, and the hospital took over eight years to be built because they were unable to prevent recurrent outbreaks. With each new ship that entered the area, there was fear that those on board as well as the cargo were infected with the disease. The military was unable to provide a quarantined area to the soldiers, so many would either abandon their post or go home. After the outbreak in 1853, many of the forts were abandoned for a lack of men to occupy them (Manuel 2004; Robinson 1991).

By 1860, the forts were scarcely occupied, if at all. As the year was coming to an end, the political leaders of Pensacola began to realize that a war was inevitable. Though Pensacola was a key shipping port, the local Union authorities did not act quickly in securing the empty forts before the Confederates (Brown 1996; Taylor 2012). Fort Barrancas was the only location with military forces still in place. With the absence of Major John H. Winder and senior lieutenant Asher R. Eddy, 1st Lieutenant Adam J. Slemmer was in charge of the company (Bearss 1957). He informed Commodore James Armstrong, who was in charge of the navy yard with Lieutenant Jeremiah H. Gilman, to begin plans of protecting public property around the Pensacola Navy Yard. Slemmer was instructed by the General-in-Chief to protect Pensacola Harbor at all costs.
He took part of his command to Ft. Pickens to gain a stronger footing in the protection of the port. All work on preparing Ft. Pickens was halted when Slemmer was informed that Armstrong did not provide aid and extra men to Ft. Barrancas as promised. He was forced to take his men back to Ft. Barrancas and aid Gilman (Bearss 1957). On the 9th of January Slemmer was ordered to protect the forts, but with the few men he had at his command, he chose to defend Fort Pickens because it would provide control over the entire harbor.

The Rebel authorities hesitated to open fire on Fort Pickens because they realized that if they did, it would initiate a war that was best to be avoided if possible. However, if they waited, then the Union would be able to reinforce Fort Pickens with more men and ships, making it impossible for the Confederates to gain control over Pensacola. By the 10th of January 1860, Florida became the third state to secede from the Union (Brown 1996: 231-248; Taylor 2012). The Pensacola naval shipyard and railroad link was considered to be a vital asset to the Southern cause. The naval shipyard, controlled by Armstrong, surrendered to Florida and Alabama troops on the 12th of January. The naval shipyard provided the Confederates with “dry-docks, workshops, warehouses, barracks, a hospital, 175 cannons, projectiles, and ordinance stores” (Taylor 2012: 54). Though the Confederates gained a strong position with the Naval Yard, they were unable to properly supply their forces without control of Ft. Pickens. This was because of the location of the fort at the mouth of Pensacola harbor.

With no physical contact or harm done on either side there was a stalemate between Ft. Pickens and the Naval Shipyards. No immediate attack was planned on Ft. Pickens, even though there was such a small number of Federals located within Confederate lines, as long as they agreed not to reinforce their position. This so-called Buchanan truce was established by the U.S. Senator Mallory of Pensacola and President James Buchanan. With this truce in place, Slemmer
was able to refuse any terms of surrender. This all changed when President Lincoln was
inaugurated into office in March 1861. He immediately sent troops to reinforce Ft. Pickens, and
the truce was made null and void (Bearss 1961). The attack on Ft. Sumter in April 1861 was the
first blood spilled and marked the beginning of the Civil War. Ft. Sumter and Ft. Pickens were
similar in that they were both a small battalion of Federal soldiers barely holding a fort located
deep within Confederate lines. The difference was that Ft. Pickens could be reinforced by the
sea, whereas Ft. Sumter was located within Charleston Harbor and could easily be cut off from
naval support (Bearss 1957; Taylor 2012). Brig. General Braxton Bragg hesitated before
attacking Ft. Pickens after President Lincoln sent reinforcements, because he did not believe that
he would have enough manpower to overpower the fort and if he did, he did not believe that it
would provide any real advantage because the Union had full control over the Gulf at that time
(Taylor 2012).

On the 29th of August 1861, the Confederate president Jefferson Davis authorized the
construction of three gun boats. These gun boats were to be used for the defense of the Florida
coast. The first was to be built in Jacksonville at St. Johns Bluff, the second at the Frederick G.
Howard shipyard in Milton, and the third at the Ollinger and Bruce shipyard in Bagdad (Rucker
1990; Willis et al. 1992). The use of ships during this period was very important in providing
support and reinforcements to the different forts around Pensacola. Ships were the only type of
transportation that Federal troops could use when travelling around Ft. Pickens, and their only
source of outside information came from the Gulf. The railroad provided a great source of
information and supplies for the Confederates, but without access to the Gulf they were unable to
gain sufficient support. With this disadvantage, the Confederates realized how critical ships and
other sailing vessels were to the war. The Federals also realized their significance and chose their first assault on a Confederate ship.

Even though the Civil War had begun, there were no attacks in Florida until September. First blood in Florida was drawn when Federal troops launched a small assault on the Confederate Vessel *Judah* (Brown 1996; Taylor 2012: 35). A series of retaliations from both sides continued into the early spring of the next year. Any attacks on the forts proved futile because they were too heavily armed and guarded on both sides. The best advantage was to attack one of the ships carrying supplies to and from the different forts. Without control over Ft. Pickens, the Confederates were at a continual standstill and unable to gain strategic positioning in the area.

In January 1862, Ulysses S. Grant launched an attack into southern Kentucky and northern Tennessee. Ft. Henry and Ft. Donelson surrendered by February, and the Confederacy realized that they would need more men to prevent Grant from continuing into Mississippi and Alabama. With the fall of New Orleans and the Federal invasion into Tennessee, Confederate soldiers were ordered to leave Pensacola by May 1862 (Bearss 1957; Brown 1996; Taylor 2012). The problem was that the southern troops were also preparing to battle the Union General George McClellan to the east. The Confederate government settled on pulling troops from the lower South, which included Pensacola, and thus the entire Florida coastline was abandoned. The enactment of the “scorched earth” policy was often used to prevent the valuable Southern resources from being taken by the advancing Union armies. The policy basically required that nothing be left behind that could be of any use to the enemy. One particular instance of this tactic being enacted was in Jacksonville in the spring of 1862, where Confederate troops were evacuated from Amelia Island and Fernandina. They were ordered to leave nothing to the Union
(Bearss 1957; Rucker 2002; Taylor 2012). This policy was carried out at a similar time as the one in Pensacola, where the entire industrial base of west Florida was destroyed in a ruthless manner. When General Braxton Bragg withdrew his 8 thousand troops from Pensacola, Governor John Milton protested to the Secretary of War stating that such an act would leave all of Florida to the mercy of the Union troops (Bearss 1961). The order was sent out by Bragg on the 27th of February 1862:

You will make all dispositions at the earliest moment, working day and night, to abandon Pensacola. Send to this place [Mobile] all the heavy shell guns, rifle guns, and carriages, &c., complete, with the ammunition for them; all other supplies to Montgomery…This movement should be made with all the secrecy possible; removing your guns at night, and masking the positions, taking the most advanced first. Keep sufficient troops in position to deceive the enemy until all is ready. As you do so, send forward all bodies which can be spared, only reserving enough to do the work, and hold your positions until the last, when one regiment can wind up all, and leave by the railroad.. I desire you particularly to leave nothing the enemy can use; burn all from Fort McRee to the junction with Mobile road. Save the guns, and if necessary destroy you gunboats and all other boats. They might be used against us. Destroy all machinery, &c., public and private, which could be useful to the enemy; especially disable the sawmills in and around the bay and burn the lumber. Break up the railroad from Pensacola to the junction, carrying the iron to a safe place. [Reiger 1971:835-36]

The Confederate troops swiftly carried out the orders of General Bragg. All cannons were removed by cover of night and every piece of material that could be used by the enemy was carried away. On the 10th of March 1862 General Jones ordered Lieutenant Colonel William K. Beard from Leon County to enact the “scorched earth” policy before the evacuation could be completed. Beard’s orders were

You will burn every saw-mill, planning mill, sash factory, every foot of lumber, and all boats of every description. If there is any cotton at any of the places you will not fail to destroy it…It is not supposed that you will meet with any opposition, but should there be, you will carry out your orders by force of arms. I rely on you so to execute your orders that nothing or material value to the enemy shall be left in that vicinity. [Rucker 2002:4]
This was the last action before the Confederates could fully evacuate Pensacola. Beard enlisted the help of Alexander McVoy of the Milton firm of Keyser, McVoy and Company. McVoy was familiar with the Blackwater area and acted as a guide for Beard and his men. Beard took 100 men on the steamer *Tom Murray*; they boarded at Deer Point and departed at 8 pm on the 10th of March 1862 (Beard 1862; Bearss 1961; Rucker 2002; Woolsey 2011). Though the inhabitants of western Florida were aware that a “scorched earth” policy would take effect, they believed that the action would begin at a later time and there would be some knowledge of it taking affect. This, however, was not the case, and many Floridians were taken by surprise as Beard and his men showed up. The map in Figure 1 illustrates the path Beard and his men took while beginning the scorch earth policy.
Figure 1. Map of Beard’s Raid. Image taken from: Rucker, Bad Day at Blackwater: Confederate Scorched Earth Policy in West Florida, 5.
They first arrived at Miller’s steam sawmill, where they proceeded to burn the mill, a blacksmith’s, and carpenter’s shop. Beard also had all lumber and any boats destroyed on site. Next they headed to E. A. Pearce and Son; on their way they stopped some oyster boats and proceeded to force everyone out of the boats without letting them retrieve a single article or possession before burning them to the water line. The Pearce mill was burned to the ground and those who were there were forced to watch helplessly. At Criglar, Batchelder and Company the mill, lumber sheds, office buildings, and carriage house were burned along with the steamer John Hunt and any piece of lumber and boat present (Beard 1862; Bearss 1961; Rucker 2002). Across the bay, Beard stopped at Ollinger and Bruce shipyard at Bagdad. Ollinger and Bruce noticed the flames arising from the other mills down river and tried to sink their 500-ton dry dock. The parts that remained above water were burned upon Beard’s arrival. The controversy surrounding the gunboat being built for Confederacy troops is debatable. Beard was to discuss the progress with Ebenezer Farrand. Farrand was in charge of the construction of the two vessels. If the vessels were capable of being towed, then Beard was supposed to take them along. Farrand was away in Jacksonville at the time, and even though the boat had been in the water for five days, Beard decided it would not be practical to tow it and had it burned on his way back from Milton. The Ollinger and Bruce shipyard was completely incinerated before Beard continued on his way (Bearss 1961; Rucker 2002; Woolsey 2011).

On their way further up river, they came across a steamer owned by Ezekiel E. Simpson. They allowed him to land with all those on board before burning the entire vessel. Beard’s next stops were the Bagdad mills, where he set fire to the largest industrial complex in the area. He burned all lumber mills, sash factories, planning mills, ice houses, lumber sheds, machine shops, and a blacksmith shop. Slave quarters and office buildings were also destroyed. While trying to
destroy all the lumber, the Simpson house caught fire, though it was extinguished several times by the slaves. There were numerous pleas to wait until morning or have some of the items removed before the destruction, but all requests were denied. Many people lost everything. Not only did the soldiers destroy the entire area, they also broke into some of the stores and stole materials and clothing. All complaints and objections fell on deaf ears. Beard next arrived at Milton, but the wind was much stronger and the town was at risk of heavy destruction if fire was set to the mills, so he took his men up to the Jackson Morton plantation upstream. Morton was out of town and unable to object to any of the destruction. Back down river, Beard returned to Milton, where they burned the steam-powered sawmill of the C.P. Knapp and Dycus Company and the Keyser, McVoy and Company. Soldiers travelled through the town and scorched every boat and bale of cotton found. The next victims were Penny and Chadwick’s Milton Iron Foundry and Frederick G. Howard’s shipyard. This was the location of the second gunboat, and it too was ready to launch, but Beard still had it burned (Bearss 1961; Brown 1996; Rucker 2002; Woolsey 2011).

The next day, the 12th of March, Beard and his men continued westward as they steamed into Pensacola and Escambia Bays, where they proceeded to destroy Hyer’s Pensacola Bay planning mill. The next target was a brickyard facility of Bacon, Abercrombie, and Company. They crossed Escambia Bay where they burned John McGehee’s sawmill and Dr. William Judge’s steam-powered sawmill complex. The last area of obliteration fell on William Wallace’s sawmill and any other lumber areas near Chumuckla. Beard finished the raid on the 14th of March 1862, and as stated previously, no warning was given to the citizens of the area and many were forced to watch as their valuables along with their businesses were demolished (Bearss 1961; Rucker 2002). Among the many things destroyed during this time were furniture, business
documents, housing, and valuables. The residents of west Florida feared the effects of Union soldiers taking over the area when the Confederates abandoned it, but after the raid caused by Beard and his men, many inhabitants turned their loyalties away from the Confederates and welcomed the Union. It was later discovered that the Union forces were overestimated at Fort Pickens and there was no Federal action after the raid. This means a systematic evacuation could have been enacted.

The damage to the industrial section of west Florida was extensive. In a letter written to John Milton by Alex Blount, he explained the devastation caused by William Beard’s raid. He listed all properties affected, and discussed how there was no notification or allotted time to remove any valuables before the damage began. The raid created many sympathizers to the Union’s cause. The raid was unnecessary and an atrocious vandalism to the individuals who had supported the Confederates. The entirety of the industrial section took about thirty years to build into a successful endeavor, and to have it destroyed in a matter of a few days caused many inhabitants to abandon Santa Rosa County in search of a better living situation (King 1972; Rucker 2002; Woolsey 2011). The destruction to the area would take many years to try and reestablish what was there before.

At the end of the war many of the factory owners returned to a town covered in ashes. The area suffered from food shortages and a lack of able-bodied men to work. Inflation and high taxes caused the area to fall under martial law from the Federals (Willis et al. 1992). Simpson and his partners returned to Bagdad and used some hidden funds to build another mill and try to reestablish the company. Ollinger and Bruce were able to re-float their dry dock and open business by 1867 (King 1972; Pearce 2000; Willis et al. 1992). Slowly the milling industry began to function and produce. By 1900, Santa Rosa County grew at an astounding rate as the
industry regained its footing. New industries were created, such as the fishing industry, and once more the area of Bagdad and Milton became one of the highest producers of lumber. The industries were focused further down river near Bagdad; the industries further up river, such as Mortonia, were left after the war and never rebuilt.

Specific information following the war was difficult to find. Records of the next forty years of Escambia and Blackwater River were lost during the numerous fires and floods that plagued Milton. Two notable hurricanes in 1896 and 1906 were recorded as “carrying away all the wharves at Bagdad and the village of Milton, buildings large and small were destroyed” (Appleyard 2002: 19). Three destructive fires struck Milton in 1885 and 1892. The commercial sections of town were largely affected. The worst fire of all, in 1909, razed almost every building within two blocks of the river, including the Town Hall (Santa Rosa County 2012). The towns of Milton and Bagdad did rebuild and they were able to overcome the hardships that the raid caused during the war, but the details are lacking in terms of what happened to all the industries Beard and his men destroyed. Figure 2 is a 1850s plats map that has the locality of Milton and Bagdad with numerous archaeological sites located around the area. There were vague descriptions of where the different wharfs were in relation to Milton and Bagdad. The larger shipyards, such as Ollinger and Bruce, were described as being located in the town of Bagdad, but there have been many landscape changes over the years in terms of erosion and where some of the wharfs once were may not be the same location today.
With so much destruction during Beard’s 1862 raid, it was difficult for industries to rebuild and begin again. Bagdad was able to rebuild and continue operations, but those to the north struggled. It is unlikely that antebellum ships were burned before the raid because it was a surprise to everyone and it would have been an obstruction noted by Beard. It is, however, likely
that it was burned post-war, because burning derelict ships to get rid of some of the structure or to recover metal fasteners was common. Based on this information I used the evidence gathered during the 2012 fieldschool to argue that the Swingbridge Wreck may or may not have been burned during the Civil War.
CHAPTER 4

THEORETICAL CONTEXT

Nautical archaeology began when archaeologists realized the importance shipwrecks have to the archaeological record and the abundance of information that would be gained from excavating them. The methodologies applied by Bass and Throckmorton were revolutionary and showed the anthropological world that archaeology could be accomplished underwater (Bass 1966; Throckmorton 1969). Sea travel had been very imperative to the development of the entire world. The sea created connections between cultures that would never have been established without the use of ships and other seaworthy vessels. Ships were also carriers of the culture that created them, which allows for great information to be gathered by archaeologists.

Underwater archaeologists have been struggling to prove their contributions to the field of anthropology. Since people first could swim, there has been salvage on sunken shipwrecks to make a profit or reclaim lost items. In 1900, a crew of sponge divers discovered a field of bronze statues in an area that was later to be called the Antikythera wreck. This wreck is one example of when underwater archaeology began to develop. By establishing an agreement with the government, Captain Dimitrios Kondos and his crew were able to remove the statues and other items found on the wreck and bring them to the Greek museum (Throckmorton 1969: 128). In 1960, George Bass and Peter Throckmorton excavated a shipwreck in the Mediterranean called the Cape Gelidonya wreck. This wreck is where archaeology was introduced to the underwater environment (Throckmorton 1987: 24). Up until that time, terrestrial archaeology was the primary method for studying the history of humans through material remains. Bass took the approaches used by terrestrial archaeologists and applied them to the underwater environment, creating another form of study and research to be added to the classical archaeology tradition.
Seen as a time capsule, the ship could answer many questions about the individuals who were onboard, the cargo being carried, the types of materials being used and much more (Adams 2001). By applying an underwater aspect to the field of anthropology, archaeologists would be able to further their research. There must be a type of harmony between determined, conscious, and explicit decisions when the techniques for a specific discipline are to be followed correctly (Plog 1974).

The aqualung, developed in 1940, and the scuba equipment developed in the 1950s allowed Bass the ability to excavate underwater. Techniques used for diving opened up a vast range of sites to be excavated with a type of precision that was not possible before (Babits and Tilburg 1998; Fontenoy 1994; Green 2004: 5). The resulting information expressed the rich history and potential information that could be obtained from these sunken wrecks. Though the work done by Bass was new and highly valuable, the incorporation of maritime archaeology into the field of anthropology was not immediate. Maritime archaeology struggled with finding a place within anthropology. There were continual dichotomous struggles between terrestrial and nautical archaeology expressed through the relentless and unchanging applications held by previous anthropologists. Archaeology was struggling to become a hard science, with a heavy focus on precise measurements and thorough documentation. The field techniques used by terrestrial archaeologists provided the starting point for Bass’s approach to underwater sites (Throckmorton 1987).

Due to the troubles that surrounded underwater environments, precision was inherently difficult for archaeologists. There is a time limit placed on access to the site because it is underwater. The environment also makes it very difficult to remain still, see the measurements clearly, apply line levels accurately, and make drawings. Even in clear water the diver is
confronted with buoyancy and currents. The hardest part is removing items from the site or clearing away the sediment to gain a better image of the artifact. Each movement will disrupt the sediment and cause a reduction in visibility that can sometimes take several minutes to clear. The environment is completely different, and being in a weightless setting, it is sometimes difficult to lay a tape or record measurements. Because there is a time limit to the excavation of the site, everything must be done much more carefully. This chapter expresses the different types of theoretical approaches that have been applied to maritime archaeology, and how they have helped it gain a footing as an anthropological sub-field. The theoretical approaches being discussed will be culture history, also referred to as historical particularism, processual, and post-processual archaeology.

Before delving into the theoretical approaches applied to maritime archaeology, first a definition would be desirable. The term maritime archaeology will be distinguished from underwater archaeology and nautical archaeology. Muckelroy defines maritime archaeology as “the scientific study of the material remains of man and his activities on the sea” (Muckelroy 1978: 24). He uses this definition primarily to differentiate maritime archaeology from related nautical and underwater archaeologies, thus excluding seafaring vessel remains found in non-maritime contexts (i.e. mortuary sites) and submerged sites not directly related to maritime exploits. While Muckelroy’s definition provides the basis for maritime archaeology, the following literature review offers a strong case for the expansion of his definition. Particularly important is the development of a postprocessual critique arguing that maritime archaeologists work in a field based on an incorrectly dichotomous view of “land” vs. “sea” (Flatman 2003). With this in mind, this chapter includes studies in maritime archaeology that fit Muckelroy’s
definition, and also considers new approaches that deal generally with maritime culture (Pollard 2008; Ransley 2005; Westerdahl 1992).

Maritime archaeology tends to draw from a variety of major source fields, which include terrestrial archaeology, cultural anthropology, and history (Green 2004: 10). The systematic collection of materials from these underwater sites originally spawned from the need to protect their historical integrity from looters and other treasure hunters. The purpose of collecting these material items was to classify, rather than try and tie the materials into a greater cultural context. George Bass and Peter Throckmorton are symbolically mentioned as the “founding fathers” of maritime archaeology (Green 2004: 16). In the 1960s, their excavations and research presented from the sunken shipwrecks in the Mediterranean opened the door for more analysis and questions about human history (Green 2004; Ransley 2005).

The time capsule effect seen in shipwrecks is quoted by Noel Hume as being “an unimpeachable terminus ante quem for the cultural material contained within the site” (Hume 1974: 189). Shipwrecks can happen very suddenly, and as a result of such a catastrophe, the resulting artifact assemblages tend to represent all the objects needed for the operation of the vessel as well as maintenance, cargo, and personal possessions (Broadwater 1981). This type of information that can be collected could provide a greater amount of information on certain aspects of the past then some terrestrial sites. The best information gathered comes from sites where catastrophic events occurred because all the material remains are in situ at the site. Submerged sites also protect the artifacts by creating an anaerobic environment for buried objects and protect those objects against such types of destructions as plowing, looting, reuse, and erosion (Broadwater 1981; Hamilton 1996).
It was not until the 1970s that more archaeologists started to take an interest in underwater archaeology and bring more questions and research techniques to the attention of other anthropologists (Gould 1983a; Lenihan 1983; Leone 1983; Muckelroy 1978; Staniforth 1997; Watson 1983; Westerdahl 1992). The collection of data from submerged sites can explain the maritime aspect of a society. A great deal of information can be acquired on such things as trade, commerce, naval warfare, transportation, and recreation. The debated question to follow was whether or not maritime archaeology would be better suited for historical or anthropological pursuits.

The culture-historical approach in archaeology focuses on defining historical societies into distinct ethnic and cultural groupings according to their material culture. Originating in the late nineteenth century as cultural evolutionism began to fall out of favor with many antiquarians and archaeologists, it gradually became unpopular among the archaeological community, being superseded by new archaeological theories, namely processual archaeology, in the mid-twentieth century (Trigger 2006). The direct historical approach argued that researchers could extrapolate backwards in time from known historical periods into prehistory. By studying a site with known historical occupations and then excavating it to establish prehistoric activity, it was reasoned that by using analogy and homology based on the historical data, theories could be postulated about the past society that had used the site long before the historical records were made (Trigger 2006). This approach was established during the 1920s and 1930s. Watson (1983) used the example of the Cape Gelidonya wreck for the direct historical approach. The extensive knowledge of the Greeks allowed archaeologists to approach the wreck with a written history, and through their excavations they are able to work into prehistory. This work was the beginning stages of what was to become nautical archaeology; the methodology was shadowed from the
techniques used by terrestrial archaeologists. The wide-ranging familiarity the Greeks possessed about trade and sea travel allowed Bass and Throckmorton to approach the wreck with a background and possible history before even beginning excavations.

This approach proved difficult to apply to the Swingbridge Wreck because there was no detailed history to work backwards from that could answer the desired questions of what was this wreck used for, who owned it, why did it sink, etc. However, there is greater access to historical sources than what was previously available and such information can be acquired in some cases. The Swingbridge Wreck is positioned in such a manner that excavating half of the ship is just as useful. The best approach to this wreck was to take the information gained from excavation and work backwards.

Historical particularism views each culture as the product of a unique sequence of development in which the largely chance operation of diffusion played the major role in beginning the change. Bass argued for this approach in maritime archaeology, especially with shipwrecks (Bass 1966). He believed that shipwrecks could provide the missing information to tie cultures and historical events together. Since shipwrecks are viewed as time capsules that can inform the archaeologist about the past, Bass pushed for full excavations. A full excavation can give information about more than just the shape and structure of the vessel; how the crew and its passengers lived and what cargo was being carried could also be provided (Baker 1982; Bass 1966). A frequent argument against this method is the symmetrical design of the ships (Trigger 2006). If one side of the ship is excavated, it can be assumed that the other side is the exact same so it can be left in situ for future generations to excavate in a less destructive manner. This can be helpful when only ship construction and design are being questioned, but when specific
questions are being asked about the material culture remaining on board, it is harder to argue for only half an excavation.

In the mid-twentieth century, a new approach to archaeology was introduced called New Archaeology. The development of this approach was highly influenced by the hard sciences. Anthropology was struggling to prove itself as a valid field of study. Hard sciences such as biology and chemistry were able to offer repeatable experiments based on hypotheses. Lewis Binford attempted to apply this approach to archaeology to prove that the field of anthropology was just as important (Binford 1962; Binford 1968). By formulating hypotheses and testing them with the collected data, in theory, archaeologists should be able to prove their finds and have the data to back their interpretations. Many of the first advocates in maritime archaeology were taught to use the anthropological perspective of this processualist philosophy. An abundance of literature in maritime archaeology that provides explicit research design, hypothesis formulation and testing, and broader cultural interpretations of maritime sites was introduced (Gould 1983a; Lenihan 1983; Muckelroy 1978; Throckmorton 1969; Watson 1983). Beginning as an approach to seek and understand how systems change irreversibly, processualism led into the middle-range theory which explored site formation processes and site interpretations (Binford 1968; Goodyear 1984; Raab and). Middle-range theory is an approach to sociological conjecturing aimed at assimilating theory and empirical research (Binford 1968; Trigger 2006).

Processualism was a new approach that attempted to apply the methods of the hard sciences to archaeology. By hypothesizing and testing the data, archaeologists hoped to fulfill the rigors of the scientific method. The use of site formation processes allowed archaeologists to make interpretive suggestions about shipwreck sites and how to explicate the history. The difficulty was that this approach could not elucidate all the shipwrecks being discovered. In some
cases there was no known information to begin with, some shipwrecks were a complete mystery with no information to explain the past and no written documents of its history. A major flaw with maritime archaeology was the lack of confidence coming from fellow anthropologists. They believed that underwater archaeology was not a valid part of the profession because they felt that the excavations and recordings conducted underwater were not obtained on a professional and accurate level. Middle-range theory helped maritime archaeology to gain a professional status.

The use of site formation processes is an excellent way to research the background topography of the area surrounding the shipwreck. Figure 3 shows how the use of geographical information systems (GIS) has enhanced the archaeologist’s ability to understand the area of research through recreated images.
By using a Windows-based information management system, archaeologists can begin layering old land plat maps with recently excavated sites and observe the changes in the landscape and location of certain icons (Phillips 1997). The use of this technique has shown me where other wrecks are located in relation to the Swingbridge Wreck based on previous research information.

Beginning in the 1980s, postprocessual archaeology was applied as a solution for resolving the shortcomings of processual archaeology (Erickson and Murphy 2008: 146). This method is a culturally oriented approach labeled postprocessual by Hodder (Erickson and Murphy 2008; Trigger 2006). Robb stated that “postprocessual archaeology can be regarded as the inevitable rediscovery of the concept of culture as a source of cross-culturally idiosyncratic
variation in human beliefs and behaviors” (Robb 1998: 444). A number of postprocessual criticisms were being developed in maritime archaeology. Post-processual perspectives challenge the assumptions that are tied to the rigorous archaeological approaches (Flatman 2003; Gould 1997). The debate surrounding underwater fieldwork in part stems from the small allotted time in the site and the inability to observe the larger picture. Many arguments were centered on the fact that maritime sites are typically distinct, in that they are comprehensive if undisturbed, resulting in identifiable archaeological material (Muckelroy 1978). Maritime sites are extraordinary because they are sheltered from construction, growing cities, and other destructive activities that occur on land. This does not eliminate effects of Mother Nature, recreational diving, and fishing industries; however, underwater sites are located in a plethora of depths and environments (Baker 1982; Fontenoy 1994; Ruppé 1981: 247).

A post-processual approach allows the archaeologist to analyze symbols to interpret form and function of the vessel without necessarily having a direct history to clarify its past. The ship could be viewed through gender studies or symbolic studies of power and belief. Foucault uses the ship to express domination and control of individuals, how the structure of the ship itself was a symbol of power (Foucault 1961). A look at historical documents to influence the description of the ship as a symbol could also follow the lines of a direct historical approach, especially in the case of the ship of fools (Foucault 1961). Documents inform the archaeologist about past events, and through the archaeological record and continual excavations, the written record is either verified or discredited.

Exploring shipwrecks and collecting as much information as possible through careful excavations has allowed archaeologists to compare their research with previously observed documents. In some cases, the research conducted on the shipwrecks has discredited the accounts
made in the historical documents. In the field of anthropology, it is important to learn as much as possible about our human history. By checking the previously gathered information, researchers were able to provide a more accurate understanding of the archaeological record. Garrison (1995) discusses the study of industrial technology, maritime or otherwise, through both textual and archaeological data, and how it uniquely influences the industrial object directly through the reading of it. He references three ironclads, and through an archaeological and historical approach, he explains how the symbolism and myth can be removed from the society that imposes such beliefs on them. Symbolism plays a large role in the understanding of ships and shipwrecks. Ships were seen as symbolic structures that carried a culture’s beliefs and practices to other cultures around the world (Foucault 1964; Garrison 1995).

An example of symbolism in reference to ships and their use comes from Foucault’s writing on the ship of fools (Foucault 1961). The ship was a symbol of transporting individuals to the next life or after life. The sea was a mysterious place that was to be held in high regard and never underestimated. Sailors always respected the sea because they were constantly aware of the imminent dangers Mother Nature would pose upon them. Belief in mythical gods and goddesses allowed sailors to cope with the unexpected weather changes and violent storms that risked their lives daily. When sailors traveled out to sea, they would be considered lost or dead until their returned because of the unpredictability and frequency of shipwrecks. The ship of fools was designed to ferry individuals who were considered undesirable or ill to another place (Foucault 1964). Individuals taken from insane asylums were put on a ship, and it was put out to sea in the hopes that the ship would sink or be destroyed. In this case the ship was seen as a symbol for carrying individuals to the afterlife. In most cases the ship would arrive at another port and the inhabitants were overwhelmed with a ship full of insane individuals.
Power struggles are another form of symbolism that Foucault (1979) discusses frequently in his work. Power can be asserted over a human without demanding authority. There are subtle symbols and actions that can show authority and power without verbal expressions. When a person sits higher than another, they are showing authority over the other because they are looking down upon them. This simple action can have great effect over people; children look up to elders, a factory owner looks down over his staff from above, and a ship captain looks at the crew from the forecastle. This notion of looking down makes the authoritative person feel bigger and more powerful, allowing for confidence in their position to increase. The archaeological evidence pointing towards nautical situations of power struggles come from first-hand accounts, such as the book written by Richard Dana, or the written documents about trials or grievances expressed against the captain or the company (Chistopher 2006; Dana 1840; Flatman 2009; Gilje and Pencak 2007).

When on board a ship, the captain is the ultimate power, and there is no one who can stand above him (Dana 1840; Padfield 1999; Rediker 1987). He will watch over the entire crew and assert authority onto the mates, who will, in turn, pass on his directions when he is not present. The captain is also always observed by the crew, and if he is unfair or cruel to the crew he will be held accountable, if not by the men on board, then by officials when they make port. Documents describing these brutalities have been identified in works presented by Rediker and Flatman. The historical records describe the balance of power and the consequences for rejecting the rules. Nautical archaeologists can complement the records through the excavation of shipwrecks. Foucault introduces the term panopticism; it is an archetypical figure where “an individual is induced with a state of conscious and permanent visibility that ensures the automatic functioning of power” (Foucault 1979: 201). The discussion of panopticism can be
seen in ship construction and records portraying the design of the ship. Especially when dealing with the history of sailing and trade networks, underwater archaeologists work with the documents to provide a complete history of the ship’s function. The wreck can be compared with the recorded documents. The behavior and actions of the crew were highlighted in stories and court cases. Some ways in which the crew asserted power over the captain when they were not pleased with his actions included taking extra-long to perform any task, causing him to be soaked when rowing him to shore, going right up to him and demanding change, or taking their complaints to the mate who would pass it on to the captain (Dana 1840; Foucault 1979; Rediker 1987). The ship’s crew would not be powerless, for power can be asserted through subtle innuendoes, force, trickery, and laziness. No person lacks power, they simply use it to different degrees based on their abilities and privileges at the time (Christopher 2006; Gilje and Pencak 2007; Hattendorf 1996; Hattendorf 1997). Some of these examples can be found in the written record, which is why the history and the archaeology are both very vital in understanding the past and the people who inhabited it.

A post-processual approach to the topic surrounding the history of the Swingbridge Wreck can be viewed through the possible roles of the people living in Milton at the time of the Civil War. Another aspect could be the efficient efforts of Beard to carry out orders. The power struggles between the inhabitants and the Confederate raiding party can also be highlighted because even though there was little warning, there were some cases where the people of Milton were able to show their disdain for Beard and his men. This approach is not one that I will focus heavily on, even though I do find it very interesting.

The theories discussed in this chapter briefly describe the field of maritime archaeology. The field is still early in its development and still perfecting new ways in which to excavate and
collect data. Bass’s historical particularism approach is one method for learning as much as possible about a ship and its history before it is destroyed (Bass 1983). With constant movement in the sea, ships are always being shifted back and forth; however, once submerged in this underwater environment for a period of time, the wreck will reach a point of equilibrium until disturbed by divers. The argument stands that if archaeologists do not do everything in their ability to excavate the wreck fully, all the information will become lost. Weather and tides are not the only fear to nautical archaeologists; treasure hunters also pose just as serious of a threat, if not worse, to some shipwrecks. The lust for gold and valuable material draws amateur archaeologists and divers to a site to collect and sell as much of the material as they can find. The use of dynamite and other harmful tactics are employed to separate concreted artifacts from the wreck or sediment (Throckmorton 1990).

Maritime archaeology is a different type of research application than terrestrial archaeology; the sea introduces new types of hazards and restraints upon the archaeologist that would not normally be seen. The application of precise measurements and accurate drawings are not always possible. Time limits are placed on the diver to record as much information as possible. The use of a water induction dredge can disturb the site and such artifacts as rope and other fragile finds can easily be destroyed if not noticed in time. Currents and weather are a constant factor deciding the availability of the site and whether or not archaeologists are able to continue excavations (Ruppé 1981). The depth of the site and the location also play a large role in the site’s availability. The methods applied to maritime archaeology were originally introduced as an extension to terrestrial methods and techniques. The approach by Bass provided a starting point for what was to become nautical archaeology, but the methods Bass employed were established in a terrestrial context. Bass adjusted some of the methods, which is why the
process of collecting data and recording information is referenced to terrestrial approaches; the major difference comes from the difficult nature of excavating underwater and the material needed to sustain the pressures from the water column as well as a resistance to being wet (Gould 1983a; Muckelroy 1978; Plog 1974; Throckmorton 1969).

New techniques and equipment are constantly being designed to make diving easier and the diver more comfortable in the water. The problem that prevents archaeologists from attaining such equipment is the cost. Nautical archaeologists are also racing against a never resting enemy—the treasure hunter. These groups are usually funded by private investors who can afford to buy the latest equipment. This gives looters an advantage to finding shipwrecks and cleaning them out before archaeologists are able to record and research them (Throckmorton 1990). From an ethical and theoretical perspective, the approach taken by underwater archaeologists is to preserve and record as much of the information as possible before it is destroyed. The theory applied to this field stems from the same theories introduced for a terrestrial approach. The three theories discussed focus on the ways in which archaeologists can gain an understanding of the individuals who were on board the ships and the type of interactions that may have been taking place. There is no one theoretical approach that is best suited for the study of shipwrecks. The Culture historical approach allows the researcher to investigate the wreck with a known history and continue their inquiry with the unknown information. Processual archaeology is a formulation of specific information from the ship that can be calculated and inserted into a hypothesis with an attempt at proving the results as valid or invalid. Postprocessual approaches allow the archaeologist to delve into the unknown behaviors and beliefs of the individuals partaking in the specific ship’s history. These three theories can give life to the wreck being excavated and reveal a story that, until then, was unable to be told. My main focus will be around
reconstructing the history of the Swingbridge Wreck based on the information gathered from the 2012 excavation.
CHAPTER 5

METHODS

My aim for this thesis is to analyze the functions of the lumber industry as it was used in Milton and Bagdad. My research focused on a single wreck, where I spent the 2012 summer as a head supervisor excavating a site called the Swingbridge Wreck, in which we researched the wrecked vessel in Blackwater River. All information gathered from the ambitious efforts of my peers during the 2012 fieldschool was used to construct a history of this vessel. Before I set out to excavate this wreck, I had three hypotheses. I hypothesized that this wreck is a schooner, since coastwise schooners were favored in the area to transport lumber. By researching books dedicated to the detailed description of schooners and applying the information to the research conducted on the Swingbridge wreck in 2012, I evaluated whether or not this vessel is in fact a schooner. My second hypothesis was that this wreck was used to transport lumber. This was difficult to differentiate because so much of the wreck is buried; however, there is detailed information on the area that can be credited to the work of archaeologist John Phillips and a GIS database. Through these images, a maritime landscape was created as well as the general layout of the area around the nineteenth century. If this wreck can be connected to a wharf or docking structure located across from Milton, then this wreck may, in fact, have been used to haul lumber. The third hypothesis is the wreck sank during the Civil War as a result of William Beard’s raid. To approach such a hypothesis, I researched documents and records related to the Civil War in Pensacola around 1862. Meticulous records for March 1862 have been recorded and researched in association to the scorched-earth policy carried out by Lieutenant Colonel William K. Beard. Through these documents and maps depicting the route taken, I evaluated the location of the Swingbridge wreck in relation to the route he took and through excavations of the site; I
associated the possibility that burn marks are associated with Beard’s raid. I analyzed the remains of the vessel during the 2012 excavation; many more questions arose as additional information was gathered from the site.

The Swingbridge wreck site is one of thirty-four shipwrecks recorded by the Pensacola Shipwreck Survey (PSS). Figure 4 demonstrates nineteen of the surveyed shipwrecks located in the northern area of Blackwater River.

![Figure 4. Location map of 19th and 20th century Blackwater sites. Courtesy of the Archaeology Institute at UWF.](image)

The Swingbridge Wreck was discovered during a pilot study for the long-term management plan of submerged cultural resources by Florida’s Bureau of Archaeological Research (BAR) in
January of 1991 (Franklin et al. 1992). Pensacola bay and surrounding rivers were chosen because of locally reported shipwrecks. The survey focused on any diagnostic features, the dimensions and hull remains, which were briefly recorded, and in addition any future threats to the site were assessed. The team completed their survey with future recommendations before having it published in the Florida Archaeological Report.

A brief description of the Swingbridge site was recorded during this survey:

The wreck is southeast of the railroad swingbridge located in downtown Milton. Depth of the water near the bow is 3 feet or less, with the depth of the water at the stern being nearly 30 feet. The bottom sediment is a mixture of soft silt on top of sand. The remains of the wooden vessel, approximately 61 feet long lie along the southeastern side of the channel’s edge. The vessel lists radically to port, at an estimated 65 to 70 degree angle. The port side of the vessel is smashed down into the mud, flattened and disarticulated. The starboard side of the vessel is intact. The vessel may have been dragged to its current position and probably has also been damaged during the dredging of the channel. In addition, as the current runs swiftly along the bottom of the channel, debris builds up on top of the vessel. No detailed recording of the vessel was undertaken. [Franklin et al. 1992: 180]

Future work on the Swingbridge wreck did not begin until the 2010 fieldschool, when the students from UWF entered Blackwater River after the Horizon Oil Spill prevented any continued excavations on the Emanuel Point II wreck in Pensacola bay. Among other research areas, the students began recording the hull structure and drawing a site plan. The first steps to recording the vessel began with laying a baseline. Though it was only speculated at where the bow and stern were located, the students placed a measuring tape at the shore just past the farthest placement of timbers, which led into the grass that grew along the shoreline. This was held in place with a piece of rebar hidden in the grass and out of reach from boats and fishermen to snag their line on. From the rebar, a tape was pulled down along the south side of the vessel, based on location of standing at the shore and looking down the wreck, and laid upon the sand to keep it as straight as possible. The tape ended at twenty-four meters just past any visible timbers.
The end of the tape was also held in place with a small eye hook to keep the obstruction in the water at a minimum. A rough measurement was taken for the breadth of the wreck at 6.5 meters (21.33ft).

Since the wreck was at such an angle the students had to measure the hull structure in sections and use baseline offsets. A baseline offset is a second tape laid in another area along the wreck that acts as another baseline. The second tape is recorded to the first tape by use of triangulation. For example, if the baseline offset is placed five meters apart from the original baseline, to ensure that the offset is parallel the use of triangulation allows the archaeologist to apply multiples of three and four to the remaining triangle. The use of the baseline offset allowed the students to record different sections of the wreck that were at a difficult location to reference the original baseline. They also recorded four datum points around the wreck to tie in the different baseline offsets so different groups of students could focus on different areas of the wreck simultaneously. Some areas of focus were the deeper portion of the wreck because the timbers were still intact and preserved the shape of the vessel. There was a timber with a large circular hole in it that was believed to be a possible mast partner. This timber later broke away and fell to the side. The wreck was full of timbers and other debris, which made recording difficult, but the students were able to begin a site plan.

While some students focused on drawing and recording different features of the wreck, a supervisor took some students to begin recording the profile of the wreck. They were able to do this by placing pink flagging tape on the nails that lined the side of the wreck located at a higher level than the side with the baseline. If one sat by the baseline they would be looking up as the vessel rose at an angle. Depending on the location of the bow and stern, which would identify which side was going into the sediment, the wreck was sitting on its side and the timbers that
were exposed on the highest portion was the actual outer hull. So, if facing the wreck while standing on the shore, the north side was higher than the south side. The use of the flagging tape separated each measurement and the students measured in meter increments along the wreck. They would use a line level and a plumb bob on each side of the nail to gather the depth and angle at which the wreck was sitting. Figure 5 is an image of the profile recorded at the different increments during the 2010 fieldschool.

![Figure 5](image)

*Figure 5. Drawing of profile view of hull structure. Original held at the University of West Florida.*
In the summer of 2011, a team led by a fellow graduate student at the University of West Florida excavated a shipwreck just around the corner from the Swingbridge wreck in the Blackwater River. It is called the Centerboard Schooner. During the summer’s excavations I joined a small team for two days briefly to observe the Swingbridge Wreck and see how it was weathering after the 2010 field season’s excavation. The first step was to have a brief orientation of the site. We had a student from the previous summer’s excavation show us around the wreck before any work began. The visibility was good when the sediment was not disturbed by our fins. The current moved swiftly and any disturbance was cleared away quickly. We removed all remaining tapes and string used by the previous fieldschool. Then we laid a baseline offset along the left side of the wreck and began a rough recording of the section closest to the tape as a mapping practice. Since we only had two days to observe the site, we only did a brief recording of the condition and worked out future plans for the next summer.

It was not until 2012 that full excavations began. I entered the water with a team of eager students during the summer’s fieldschool. The only detailed information written about the wreck came from the 1991 field report and the research completed by the 2010 fieldschool:

The weathered deck of the vessel is constructed of pine. Hatches in the deck measures an estimated 4ft. by 5ft. Iron fasteners were used. Caulking was noted between planks. A baseline was attached with the zero point at the bow or eastern end. At 31 feet on the baseline, a hole, 1.5ft in diameter was observed in the deck. At 32 ft. on the baseline an iron concretion unidentified, was observed behind the hole running through the deck. Frames were measured at 4ft. by 6ft. The steering station was present, located at 52ft. on the baseline. Due to the disarticulation of the hull the wheel is 90 degrees off center, and faces the port side of the vessel. The steering wheel is made of iron, held on with a bronze nut. [Franklin et al 1992: 180]

As described before, the Swingbridge wreck is positioned at 65-70 degree angles in the sediment with the suggested bow facing the shoreline; it follows the slope of the river bed as it drops
perpendicular away from the shore. Assuming the bow faces the shore, as was suggested by the 1991 survey, the vessel is listing to port. As one swims along the wreck, the starboard outer hull is exposed and the timbers on the port side are the remains of the decking. The starboard timbers run horizontally along the wreck, with vertical timbers acting as frames for the outer hull to connect to. On the port side the timbers run into the sediment, and they are only the frames and remnants of the ceiling planking that held the floor timbers. The deeper one goes the more intact the vessel remains, with the timbers from the actual decking still remaining running horizontally. The vessel remains the most intact at its deepest point; however, the closer to the shore, the less articulated it is.

There are three prominent features on this wreck that were located during the previous summer’s observations, the possible shelf clamp, the mast partner, and the keel. A shelf clamp is a “thick ceiling strake used to provide longitudinal strength or support deck beams” (Steffy 1994: 269). A mast partner is the fore-and-aft beams that help to support the mast where it pierces the deck (Delgado 1997; Hocker and Ward 2004; Steffy 1994). The keel is the backbone of a vessel; it runs horizontally along the center line of the bottom. Copper sheathing, found on the keel, is a metal fastened to the outer hull below the water line to protect the ship from marine growth and teredo worms (Delgado 1997; Steffy 1994). These features will be explained further in the chapter. Figures 6 through 9 are schematics taken from Steffy followed by a drawing of the actual timbers from the Swingbridge Wreck.
Figure 6. Image of a shelf clamp (6). Image taken from: Steffy, Wooden Ship Building and the Interpretation of Shipwrecks, 876.

Figure 7. Drawing of potential shelf clamp. Original located at the University of West Florida.
Before any excavations could begin on this wreck during the 2012 summer fieldschool, I researched a method to map and record the vessel. It did not sit at a two dimensional angle, so I
had to approach it in a three dimensional perspective. The approach to constructing a site plan was a challenge. I had to remove all the debris that was covering the site and record it separately since it was not *in situ* (such as glass bottles, loose hull structure, etc.). I recorded the debris to observe a site formation process, especially since the current moves debris and accumulate trash dumped along the river. I did not use any type of sonar (side scan sonar) because the wreck is located in an intertidal position that makes access extremely difficult if not impossible. I was thinking about constructing a photo mosaic to begin with to gain some idea of what I was looking at. However, continual boat traffic and local fishermen make it difficult to photograph the wreck without any disturbances. With the baseline at the south side of the ship, it made it challenging to map any dimensions because of the angle of the wreck.

A rough approach to measuring would be using a protractor; I could record several angles if I used the original baseline and a baseline offset. The problem with the protractor was the time frame and the rough measurements would only be estimation. One would have to use a string with a line level to come across the wreck and use a plumb bob, but the current and width of the wreck would prove problematic, not to mention the debris that juts up around the wreck. A more feasible approach would be to use the Direct Survey Method (DSM). DSM was used to create a three dimensional image of the wreck. Originally created by Nick Rule to map and record the ship Mary Rose, the technique uses a direct tape measurement from datum points of known three-dimensional coordinates, the use of redundant data to identify and quantify errors, and the use of a computer program to process the data and find the best fit solutions for the points being surveyed (Rule 1989).

During the scientific diver week of fieldschool, the students learned how to apply archaeological techniques in an underwater environment as well as testing their diving skills; I
had them practice the DSM program on dry land. I set up a mock wreck with a goal of familiarizing everyone with the purpose and function of DSM before applying it to the site. In the water there was more focus on buoyancy, visibility, and air consumption. At the site, a typical crew consisted of eight individuals, three teams of two in the water and two individuals on the surface. One served as safety diver, who sat by the water with their dive gear ready to assist in an emergency. The second person ran topside operations; they were in charge of the project phone and recording all dive information. It was beneficial to have two sets of eyes on the water. Since the site was located by the shore, we were able to take the pontoon and tie off to a nearby tree about 50 feet from the wreck so divers could enter the site in waist deep water and walk to the wreck. Before any team entered the water, there was a safety briefing read to everyone to make sure all were aware of the dangers posed by the site and to review all forms of communication underwater.

The DSM program took some time and redundant measurements to set up, but once completed the measuring and recording came easier. A square with four datum points were set up around the wreck. These four points were marked with different types of material based on their location in the water. The first datum (A) was placed in the water with an eye screw and had a piece of pink flagging tape tied to it. This point, placed closest to the pontoon and nearest the shore, was recorded by a GPS position. The second datum (B) was placed on the suggested port section of the bow south of the original baseline, marked by a rebar. The top of the eye screw acted as the place of measurement to proceed with all further measurements taken from datum A. The tape measured the distance between datum A and datum B. A line level made sure the line between the two datum’s would be level. The location of the line on datum B was marked with a zip tie. With a diver on each datum and one in the middle making sure the line
level read correctly, we were able to make the best judgment call. After the datums were level, we used a tape to measure the distance between both. We measured from datum A to datum B and then switched the tape to double check the measurements (11.45m/37.57ft).

Datum D was located with a PVC pipe because it would not cause any damage to a passing fishing boat or any swimmers. The top of the pipe was capped and a piece of pink flagging tape was tied to it as an extra precaution. The pipe could not be sticking out of the water because of the hazard, and it was impossible to have a long enough pipe to place at the end of the wreck, so we went down as far as we could so the top of the pipe would be level with the top of datum A. Again we had three people in the water to observe the two datums and the line level. Datum D proved difficult because the PVC pipe was flexible and if the diver held onto the pipe, it would move with them. The diver had to only place the string on top of the pipe without holding onto it and because of the current, it took many tries and a fourth diver to make sure the pipe was not bending as the level was assessed. Once the distance was deemed level, the measurements between datum A and datum D was taken (15.15m/49.7ft). Again the measurements were double checked before the measurements between datum D and datum B was taken and re-taken (17.95m/58.89ft).

Datum C was next. This datum was very difficult to record because it had to be level with datum B and datum D. We were lucky that datum D and datum B were level, but there was little debris between them to pose a problem with the line. Datum C was at the lowest point of the wreck and there were a number of protruding timbers for the string to become entangled on. This datum was also labeled with a PVC pipe and a piece of pink flagging tape. The point of measurement had to be at the top of the pipe. The brackish water caused the divers to keep losing the pipe. A diver had to continuously swim along the string to make sure it would not become
entangled in the many timbers that jutted out from the sediment. Once level, the string was moved to datum D and with two points that moved in the current it took a while to check the line level. The line level had to weave through some timbers so it was at the diver’s discretion as to how straight the string was. The actual measurements between the two datums took a greater amount of time. The tape had to be checked and re-checked several times between datums B, C, and D. The distance between datum D and datum C being 7.75 meters (25.43ft), between datum C and datum B 12.15 meters (39.86ft), and the distance between datum C and datum A 14 meters (45.93). Just to lay and record these four points and make sure they were level and the distance measured took the first week.

After these four datums were measured in place, I took the information to a computer program and recorded the measurements into the system where an image of the four points appeared in a scale depiction of the datums around the actual wreck. Each subsequent measurement taken was recorded in this computer program established by Nick Rule. The next step was to measure to the actual wreck. The point of the four datum points was to establish a level surface around the portion of the wreck I would be recording. From this level area I measured down to a set portion of the wreck and by labeling it in the computer as a negative one, a three-dimensional image of my measurements began to form on the computer screen. I chose six nails that were located on the starboard section of the outer hull. These nails were previously used in the 2010 fieldschool for the profile. I took from three datum points to each nail and rechecked the measurement by switching the tape. Figure 10 is a photo of one of the nails wrapped in flagging tape for identification in the murky brackish water. These measurements did not have to be level because they would show the actual depth of the nails in relation to the level datum points. Table 1 is a recording of all the measurements from the three datums to each nail.
Table 1. Swingbridge Datum Point Measurements to each Nail

<table>
<thead>
<tr>
<th></th>
<th>A1</th>
<th>B1</th>
<th>D1</th>
<th>N 1-2</th>
<th></th>
<th>A2</th>
<th>B2</th>
<th>D2</th>
<th>N 2-3</th>
<th></th>
<th>A3</th>
<th>B3</th>
<th>D3</th>
<th>N 3-4</th>
<th></th>
<th>A4</th>
<th>B4</th>
<th>D4</th>
<th>N 4-5</th>
<th></th>
<th>A5</th>
<th>B5</th>
<th>D5</th>
<th>N 5-6</th>
<th></th>
<th>A6</th>
<th>B6</th>
<th>D6</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10.40m</td>
<td>13.51m</td>
<td>5.20 m</td>
<td>1.04 m</td>
<td></td>
<td>11.42m</td>
<td>14.44m</td>
<td>4.22 m</td>
<td>1.95 m</td>
<td></td>
<td>12.35m</td>
<td>15.20m</td>
<td>3.30 m</td>
<td>1.53 m</td>
<td></td>
<td>13.85m</td>
<td>16.57m</td>
<td>2.30 m</td>
<td>0.64 m</td>
<td></td>
<td>14.42m</td>
<td>16.97m</td>
<td>2.30 m</td>
<td>0.95 m</td>
<td></td>
<td>15.52m</td>
<td>17.55m</td>
<td>2.30 m</td>
<td></td>
</tr>
</tbody>
</table>

After each measurement was recorded to desired accuracy, the next step was to begin measuring the hull. Before any further measurements could be taken, loose debris had to be removed. Divers removed the loose timbers and debris and placed these pieces in a small inlet created by the shape of the shoreline grass. From this area a team of students began recording all the dimensions and features of the loose timbers. They also noted whether or not there were burn marks. While these timbers were being recorded, another team began measuring the suggested shelf clamp, because it was not in situ and I wanted to record its position before it would be
moved for further recording. The dimensions of the possible shelf clamp were all that was measured, rather than the entire timber in reference to the datum points. This proved a miscalculation on my part, though the entire timber was recorded after being removed from the wreck. The next timber to be recorded was the keel. This timber is actually two timbers connected together with copper sheathing identified on three sides of the timbers. The only area on a ship where sheathing would be on three sides would be the vessel’s backbone, formed by the stem, keel, and sternpost. Only a portion of the keel is exposed, the rest disappears into the sediment. The third feature of recognition is the potential mast partner. This timber would be placed in the center of the vessel and it would be the area where the mast would stand vertical. There were two timbers with the same size hole in them; one was standing erect, in situ, and the second was lying on its side as if it slid from the other and landed horizontally to the left. Since there is decking still remaining on this wreck, I believe that this is where the actual mast partner would have sat.

The whole starboard section was measured and recorded between datum A and datum D. Another team measured the port side from datum B to datum C, which proved difficult because of low visibility and the obstructions created by disarticulated timbers. The outer structure was the first focus to add to the already begun site plan from the 2010 fieldschool. This was easier on the starboard side because the nails were already on that side, creating a more level and easier distance to work with than taking measurements to the hull structure. On the port side the divers had to either use the baseline as a point of reference, or use the datum points B and C. A third team focused on the timbers that stretched between the port and starboard side. This section was very important because it had not been recorded before. The port and starboard sections were referenced to the previous year’s research. The timbers on the suggested bow section ran straight
into the sediment, and they all lay at different angles and lengths. To measure these timbers, we laid a tape across the wreck perpendicular to the baseline, and then we also laid another tape from datum A along the starboard section to create two baseline offsets. The team measuring the bow could reference the horizontal tape and place it in its correct location based on where both ends met with the two tapes. The tape on the starboard side allowed a team to measure the curve of the vessel as it continued from datum D to datum A. The measurements taken on the starboard side were measured in increments of half a meter. Figures 11 through 13 are some of the images created on the DSM program.

Figure 11. Profile view of Swingbridge Wreck using datums collected. Image taken by author.

Figure 12. Ariel view of site plan and datum points without labels. Image taken by author.
The summer was a challenge for diving with heavy rains and delays due to the risk of contaminants entering the river from the overflow and flooding. The days that we were able to be out at the site had to be as productive as possible. The ship was not making measuring and recording easy, and there were many instances where whole areas had to be re-measured. The sediment was very fine and hand fanning worked really well to expose the timbers. All the timbers removed from the wreck were also photographed, and some of the prominent timbers were recorded and a drawing was made. Figures 14-16 are drawings of timbers removed from the wreck and recorded separately.
Figure 14. Drawing of planks from Swingbridge Wreck. Original located at the University of West Florida.

Figure 15. Drawing of timber from Swingbridge Wreck. Original located at the University of West Florida.
I did not have any plans for dredging the site, though it was suggested once we stumbled upon a box located on the starboard section of the hull about 13 meters (42.65ft) on the baseline. I wanted to make sure that I did not expose too much of the wreck because I did not know how much of the hull was protected by the sediment and how much weight might be displaced by removing it. While observing the timbers along the suggested bow section, there was a cache of glass bottles and concretions that had obviously shifted to their current location based on the angle of the ship. By using the nails one, two, and three we recorded the placement of each bottle and concretion before having them collected and bagged for further observation and conservation in the University of West Florida archaeology lab. The bottles appeared of modern manufacture, but further analysis of them would be made in the lab.
We were able to record the three sides of the ship before the end of the summer, and the next step was to try and fill in the timbers that were inside the wreck. Figure 17 shows a hand drawn image of the Swingbridge Wreck georeferenced in space based on the GPS coordinates collected during the initial observation and excavation of the site.

![Image of Swingbridge Wreck georeferenced. Courtesy of the Archaeology Institute at UWF.](image)

The wreck was intact at these depths and a diver could penetrate it, though such actions were not allowed for safety reasons. As a diver swam along the inside of the wreck on the starboard side, they could see the curvature of the vessel. As they swam deeper they could see the ceiling planking appear in the brackish water and an idea of how the vessel was constructed began to take shape.
CHAPTER 6

SIGNIFICANCE

The timbers and debris removed from the Swingbridge wreck were moved to the shore where they were later recorded and photographed. The purpose of removing the loose debris was to begin a concise recording and mapping of the wreck itself. Frequent boat traffic likely caused the loose timbers and debris to move and shift continuously over time. Several days were spent recording each timber brought to the surface. Table 2 gives a brief description of the measurements taken; however, for a full record of all the measurements based on what was written in the notes column refer to the appendix.

Table 2. Swingbridge Wreck (8SR1488) Measurements of Timber Fragments

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<thead>
<tr>
<th>Timber Number</th>
<th>Length (m)</th>
<th>Width (m)</th>
<th>Height/Thick (m)</th>
<th>Burnt</th>
<th>Notes</th>
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<td>0.08</td>
<td>0.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1.58</td>
<td>0.28</td>
<td>0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1.50</td>
<td>0.15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>2.97</td>
<td>0.15</td>
<td>0.17</td>
<td></td>
<td>2 cutouts 1.23 m apart</td>
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<td>5</td>
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<td>0.15</td>
<td>B</td>
<td>3 holes, 5 nails</td>
</tr>
<tr>
<td>6</td>
<td>0.95</td>
<td>0.12</td>
<td>0.08</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>7</td>
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<td>0.31</td>
<td></td>
<td></td>
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<tr>
<td>8</td>
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<td>0.18</td>
<td>0.07</td>
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</tr>
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<td></td>
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<tr>
<td>62</td>
<td>1.04</td>
<td>0.07</td>
<td>B</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>0.055</td>
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<td>0.18</td>
<td>0.07</td>
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<tr>
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<td>0.09</td>
<td>B</td>
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<td></td>
</tr>
<tr>
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<td>3.48</td>
<td>0.23</td>
<td>B</td>
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<td>B</td>
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</tr>
<tr>
<td>68</td>
<td>0.83</td>
<td>0.12</td>
<td>B</td>
<td>futtock</td>
<td></td>
</tr>
<tr>
<td>69</td>
<td>0.28</td>
<td>0.07</td>
<td>B</td>
<td>tongue and groove</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>0.51</td>
<td>0.11</td>
<td>B</td>
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</tr>
<tr>
<td>71</td>
<td>0.535</td>
<td>0.085</td>
<td>B</td>
<td>6 holes</td>
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</tr>
<tr>
<td>72</td>
<td>0.57</td>
<td>0.12</td>
<td>1 hole</td>
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<td></td>
</tr>
<tr>
<td>73</td>
<td>0.82</td>
<td>0.125</td>
<td>B</td>
<td>2 holes</td>
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</tr>
<tr>
<td>74</td>
<td>0.96</td>
<td>0.09</td>
<td>B</td>
<td>1 trunnel</td>
<td></td>
</tr>
<tr>
<td>75</td>
<td>0.78</td>
<td>0.14</td>
<td>B</td>
<td>futtock</td>
<td></td>
</tr>
<tr>
<td>76</td>
<td>1.11</td>
<td>0.14</td>
<td>B</td>
<td>5 holes</td>
<td></td>
</tr>
</tbody>
</table>
Out of the seventy-six timbers recorded, thirty-eight of them contained evidence of burning. At first it was thought that a local bonfire in the area could have easily resulted in some loose debris being discarded by or on the wreck because it is so close to the shore; however, upon discovering six of the thirteen futtocks in the debris exhibited burn marks, it seems likely that the vessel structure was set on fire. Figures 18 through 21 show a few images and drawings of the futtocks before they were placed back in the water to prevent them from drying out.

Figure 18. Image of possible futtocks at Swingbridge Wreck Site. Image taken by author.
Figure 19. Image of possible futtocks recorded at Swingbridge Wreck Site. Image taken by author.

Figure 20. Drawing of a possible futtock. Original located at the University of West Florida.
The futtocks were connected to the keel and would create the curvature that signified the design of the vessel. Several of the futtocks had burn marks and the potential shelf clamp also had burn marks. The shelf clamp, as pictured below in Figure 22, was located under the upper decking whereas the futtocks would be closer to the lower hull of the ship. With these two types of timbers displaying burn marks, it is likely that this ship was burned intentionally. The reason for the ships burning is not yet discernible.

The location of the Centerboard Schooner in relation to the Swingbridge Wreck also creates speculation that Beard was responsible for the destruction of this vessel. The Centerboard Schooner contained burned timbers and a Civil War minié ball. Both vessels appear to be
situated along the same docking structure that wraps around the shoreline. With two wrecks containing burnt timbers and evidence of Civil War artifacts, it is possible that both wrecks were burned by Beard and his men; however, such hypotheses have still to be proven true.

It seemed plausible to assume that if this wreck sank during the Civil War, then it is possible to suggest that this wreck was used for the lumber industry. I sent the wood sample collected from the debris to Dr. Amy Cook, a history professor at the University of West Florida. She identified the wood as white oak. There are several types of white oaks but the most commonly used for ship construction was *Quercus alba*. The difficulty with so many possibilities is the inability to decipher which it may be microscopically.

The wood sample analyzed came from a trunnel. As depicted below in Figure 23, a trunnel, otherwise referred to as a treenail, is a cylinder shaped piece of wood that was hammered into the timbers as a fastener. The purpose was to create a seal; the treenail would expand around the area distributing the pressure equally when wet. This tactic created a waterproof seal and reduced the chances of the planks splitting (Steffy 1994: 46).

![Figure 23. Image of treenail with a clenched nail. Image taken from: Steffy, Wooden Ship Building and the Interpretation of Shipwrecks, 47.](image-url)
Different types of wood would be used to construct a ship because some species of wood were better suited for specific purposes over others. Another aspect to look at is maintenance. Ships used heavily for long voyages of trade and other purposes would become vulnerable over time. Seasons and heavy use would cause the ship to need repairs to keep it functioning. The wood used to replace certain areas may not be the same wood that was originally used to construct the ship and this can make it difficult when trying to identify the species of wood used. It is safe to assume that the trunnel used for identification came from one of the futtocks, which would rarely be replaced as it is on the bottom of the ship, so it is most likely the same wood used during the construction. The origin and date of the vessel cannot be answered definitively based on the little information known about this wreck at this time.

The artifacts found on the site were a mix of items from different timeframes. As discussed, the wreck sits at 65-70 degree angle to port, with the suggested bow facing the shore and the stern in the depth of the river. While observing the wreck before any serious measurements were taken, a cache of bottles were found in a pile against some timbers on the port section at the bow. The bottles were all of modern origin dating to the twentieth century. From what was observed from Table 3, there were a mix of different types. It could be assumed that over time, fishermen and other boaters would throw bottles overboard and, since wreck sites attract a lot of fish, this area may have been a prime area for fishing. The bottles are, however, very close to shore and it seems plausible that if the boats were coming that close they would have seen the wreck or hit it. One potential explanation is that the bottles slowly migrated over time to the area they presently were found, and since the topography of the sediment is angled around the wreck, it can be assumed the bottles ended up in the lowest area of the site.
Table 3. Swingbridge Wreck (8SR1488) Artifact Inventory

<table>
<thead>
<tr>
<th>Artifact Number</th>
<th>Artifact Type</th>
<th>Count</th>
<th>Length (mm)</th>
<th>Width (mm)</th>
<th>Weight (g)</th>
</tr>
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<tr>
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<td>247</td>
<td>55</td>
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<td>57</td>
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</tr>
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</tr>
<tr>
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<tr>
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<tr>
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<tr>
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<tr>
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<td>170</td>
<td>77</td>
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<td>14</td>
<td>55</td>
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<tr>
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<td>114.1</td>
<td>15.6</td>
<td>21.6</td>
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<tr>
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<tr>
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</tr>
<tr>
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<td>80.6</td>
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<tr>
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<td>Sheathing Nail</td>
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<td>2.5</td>
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<tr>
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<td>142.4</td>
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Other artifact types are predominantly spikes and bolts. These items were likely used for the ship’s construction, and are preserved in such numbers simply because as the wood deteriorates the iron remains. If left in the water long enough, the iron objects will become a magnet that attracts sand, sediment, shell, and all other debris around it to create a hardened shell around it called a concretion. As time continues the metallic content will slowly disintegrate leaving a hollow concretion of the former shape. When removed from the environment, archaeologists will record and x-ray the object the see what it used to be. Though the metal has disintegrated, the matter remaining will still show up on the x-ray machine. Once identified they will take the object and chisel into it to clean out the disintegrated metal leaving a cast of the object, which will be filled with an epoxy. When the epoxy hardens, an air scribe is used to chisel away at the hardened shell, leaving behind a cast of the object. Depending on how long the item is in the water will determine the quality of a cast. The artifacts removed from Swingbridge were still in the process of disintegrating. Some were solid metal, and I was able to put them through the electrolysis tank and conserve them that way; however, some were in between, and in those cases the metal was too weak to go through electrolysis, but it is too solid to be cleaned out and cast. Many of the spikes were disintegrating and unable to be conserved fully because the metal was just too weak.

Two potentially diagnostic artifacts found on this wreck were the brick and a sheathing nail retrieved from the keel. The brick was lying randomly inside the wreck with no noted associations, and was the only one found on the wreck during the 2012 excavation. The brick is machine made, dating between 1920 and 1950. The sheathing nail was lying next to the keel; it was collected to record its dimensions in the lab. Figures 24 and 25 show where the sheathing nail would have been located along the keel.
As can be seen in the images the sheathing was applied to three sides of the timber. The sheathing nails were in a line along the edge of each strip of sheathing to hold it in place, and in the cases where it peeled off or disintegrated over time, the nails remain intact and leave a trail down the timber where they once held the sheathing. The type of sheathing used on this wreck was identified as a muntz metal by Dr. John Bratten, a professor at the University of West Florida. Muntz metal is “a yellow alloy of about 5 parts copper and 2 parts zinc, malleable when hot and more easily welded than copper” (McEwen and Lewis 1953: 341). Muntz metal was a
less expensive form of sheathing and considered to be more efficient than pure copper (McEwen and Lewis 1953). The sheathing protected the ship from marine growth and teredo worms.

In the middle of the summer we utilized a hand-held magnetometer. A magnetometer is “an instrument that measures the magnetic field of the earth, it distorts the earths field on a local level; the buried or submerged ferromagnetic materials, such as iron, are referred to as anomalies” (Delgado 1997: 253). At Swingbridge, when it was safe to continue excavations, we set up five survey lines that adequately covered the site at five meter spacing. The lines were tapes placed by divers that ran parallel to the baseline. By using triangulation, we measured in each new tape based around the baseline. Since the length of the baseline was roughly 25 meters (82.02ft), with a distance of five meters (16.4ft) between each line, we measured three meters down the baseline and used the five meters distance to create the hypotenuse of 5.83 meters (19.13ft). With these measurements we laid two lines on either side of the baseline. Before beginning, all divers made sure they did not have any excess iron or steel metal on them that might interfere with the survey. Starting at the zero point, we took six readings, one every five meters (16.4ft). It took some adjusting, but the procedure was run with three divers. One held the magnetometer, another kept the nose of it on the tape and stopped it every five meters (16.4ft), and the third recorded the number at each spot. Figure 26 is a topographic map created from the magnetometer survey, which shows areas of interest for future excavations and possible areas of interest that may be excavated if there was enough time left in the 2012 summer fieldschool.
The two diagnostic half circles show the location of the two rebars holding the baseline in place along the port side of the wreck. The numbers show the different readings that were recorded during the process of running the five lines. Figure 27 is a topographic map altered to show the location of each end of the baseline and the wooden box.
The next series of circles show possible magnetic hits, and one of them is just over where the wooden box, described earlier, is located. Even though we were only able to go ten meters out on both sides of the baseline, it is possible that there is still much that has been missed. As one swims along the river’s edge and in the shallows, the entire area is littered with debris and timbers. The trouble is discerning between random wood disposed of by locals and washed up from the current and those timbers that belong to the wreck.

While looking through the timbers removed from the wreck and presenting them to Dr. Greg Cook, a professor and archaeologist at UWF, we stumbled upon what appeared to be a piece of the stem. A stem is located at the bow of the ship acting as an extension of the keel.
(Hocker and Ward 2004; Steffy 1994). Figures 28 and 29 are of a stem. Figure 28 shows the normal construction of a stem in relation to ship construction and figure 29 is a drawing of the possible stem fragment collected from the Swingbridge Wreck. The features of this timber suggested it was likely part of the stem, as indicated by were the sheathing nails on three sides, a solid bolt in the center which would have connected it to the ship, and the curvature of the timber. As the summer was coming to a close, I swam along the debris that littered the shoreline to make sure nothing was over-looked. At this time students were recording the sixteen futtocks found in the loose timbers removed from the wreck. A futtock is the lower portion of the frame that connects to the keel (Hocker and Ward 2004; Steffy 1994). Though many were deteriorated and impossible to know their exact location of the vessel, they did provide excellent information about size and most had remnants of being burned.

![Diagram of a stem](image.png)

*Figure 28. Image of a stem. Image taken from: Steffy, Wooden Ship Building and the Interpretation of Shipwrecks, 284.*
Figure 29. Drawing of the possible stem fragment found on the Swingbridge Wreck. Original located at the University of West Florida.
CHAPTER 7
CONCLUSIONS

The investigations of the Swingbridge Wreck to date have been characterized by non-invasive recording of the site in order to glean as much information about the vessel as possible without damaging or destabilizing its structure. Further excavations could commence to discern where the posited stem continues into the wreck and whether or not it is actually still connected to the vessel. Excavating a series of units could be used in the area where the box is located because it seems that there is a nice cache of concretions that kept appearing near the area. Also, when observing the diagram created by the hand-held magnetometer, there are a number of anomalies that could be explored. There was not enough time in the 2012 summer to begin such excavations, so they were left for future attempts by maritime students who wish to further research on this wreck.

The first hypothesis involves the type of vessel the Swingbridge Wreck is, and I argue that it was likely a schooner. The characteristics of a schooner that catch my attention are the possible shelf clamp and mast partner; however, with only one identified mast on this vessel it can only be speculated that this vessel may have been a schooner. The other vessel types on the river were barges or floating bunkhouses, which did not possess a mast or shelf clamps. This suggests that the vessel had at least one mast. The mast partner that remains in situ is located at the 15 meter (49.21ft) mark along the baseline, while the possible shelf clamp was located at the 8 meter (26.25ft) mark. These measurements are only approximates. The mast partner would have been located on the deck of the vessel, whereas the shelf clamp would be located on the inner hull of the vessel. We also know that the shelf clamp was not in situ, so it may have been in another place to begin with. It was located next to the keel upon discovery.
While checking the possible stern, I was able to feel into the sediment and I noticed that the timbers continued until I could go no deeper with my own arm. The timber continues to curve. I believe that what I am feeling may be part of the stern. I based this on the findings discovered on the last day of excavations. While cleaning up the area of loose debris and measuring tapes, I thought I missed a futtock near the suggested bow of the ship. The visibility was very clear that day and I saw a timber curving in the sediment. This timber was rather thick and in good condition. While reaching down to remove it and put it with the rest of the collected timbers, I noticed that it would not budge. I continued to hand fan around it and I noticed sheathing nails along two sides of the timber. I followed it as it curved into the protruding timber by the grassy growth. I was unable to continue to dig it out and it did not budge. As I swam to the other end closer to the shore where I found it, I noticed that it was broken off. I believe that the piece of stem I discovered earlier may have belonged to this timber and that what I was looking at was the stem. As a ship begins to deteriorate the stem will fall away from the ship and this timber was lying in the direction the ship was listing (Steffy 1994). With this information I believe that the bow is actually sitting at the shore and the stern lies in the depths of the river.

The approximate length of the vessel is 25 meters (82.02ft), though I believe that it is longer with the remaining length hidden in the sediment. Since it was already acknowledged that the fishing industry did not begin in the area until the 1880s; the size of this vessel adds to the supporting evidence that this vessel was not a fishing smack. The size of a fishing smack was much smaller. The discovery of a keel also points to a sailing vessel, which rules out barges and floating bunkhouses. And with the possibility of a stem on this wreck, I am confident to suggest that this vessel is a schooner. Records indicate that the coastwise schooner was the dominating vessel used during the nineteenth century and these three indications support my hypothesis.
The second hypothesis stated that the Swingbridge Wreck was used to transport lumber for one of the many lumber industries along Blackwater River. This hypothesis was less conclusive simply because there was not enough of the ship excavated to answer this question. No cargo was identified on the wreck, and the debris around the wreck was considered to be modern and naturally located based on currents and human interaction. The artifacts collected were of modern twentieth century glass bottles, which were mainly beer and liquor bottles. The brick was machine manufactured between 1920 and 1950s and the concretions were of simple ship construction materials that are numerous and less specific to the information that I was seeking. Due to the paucity of physical elements that would suggest a particular use history, such as a bow port or live well that would help indicate lumber or fishing, I am unable to conclude what the vessel was used for.

The third hypothesis theorized that Lieutenant Colonel William K. Beard was responsible for the sinking and burning of the Swingbridge Wreck. A student recorded the burnt timbers on the starboard side and noted how the burnt remnants began around the 15 meter (49.21ft) mark and continued on into the stern. With burning on the futtocks, it can be hypothesized that this wreck was burned to the waterline. This result was congruent with the actions of Lieutenant Colonel William K. Beard during his raid of Blackwater and Escambia River, though the burning of abandoned vessels to recover fasteners or reduce the size of the obstructions was common practice in maritime landscape. After the 2012 excavation, there is very clear evidence that this vessel was burned. Whether or not this vessel was burned as an act of war is still unclear. Although I was really curious whether or not Lieutenant Colonel William K. Beard had anything to do with this vessel, there was no physical or documentary evidence to support or refute this
possibility. Therefore, it could have been burned during Beard’s raid or intentionally burned as a means of scuttling by its owner.

While the 2012 investigation of the Swingbridge Wreck failed to identify and definitively prove the three hypotheses stated above, the research and excavations produced new theories and constructive models to explain the possible history of this vessel. There is still much that can be done on this wreck, the investigation barely uncovered any of the buried timbers still preserved under the sediment. Future researches could use the water induction dredge to explore the possibilities inside the wooden box. The magnetometer scan shows several points of interest that can be studied. So much of this wreck is still intact; the floor timbers remain, which is usually deteriorated before archaeologists begin excavations. With only the starboard section exposed, I speculate that the entire port section of the ship may be intact and can be researched when the right techniques and equipment are employed. The sediment and pressure is all that is holding the wreck together and it has reached a point of equilibrium within its environment. The research done on this wreck has documented the state of the site since 2010 and future monitoring and investigations can provide insight into site formation processes. Future research on this wreck can provide information about the industries during the nineteenth century.
REFERENCES

Adams, Jonathan

Appleyard, John

Appleyard, John

Appleyard, John

Babits, Lawrence E. and Hans Van Tilburg (editors)

Baker, William A.

Bass, George F.

Bass, George F.

Baugh, Daniel A.

Beard, William K.

Bearss, Edwin C.


Broadwater, John D. 1981 Nautical Archaeology: Coming of Age, but Facing an Identity Crisis. Fathom Eight Special Publication.


Delgado, James P.  

Department of Scientific and Industrial Research  
1945 A Handbook of Empire Timbers. London, His Majesty’s Stationery Office.

Drobney, Jeffrey A.  

Erickson, Paul A, and Liam D. Murphy  

Flatman, Joe  

Flatman, Joe  

Fontenoy, Paul  
1994 A Discussion of Maritime Archaeology. Program in Maritime History and Nautical Archaeology, East Carolina University, Greenville, North Carolina.

Foucault, Michel  

Foucault, Michel  

Foucault, Michel  

Franklin, Marianne with John William Morris III and Roger C. Smith  

Garrison, Ervan G.  
Gilje, Paul A. and William Pencak

Gould, Richard A.

Gould, Richard A.

Green, Jeremy

Green, Laurie

Grinnan, Joe
2013 Mill Mills: Molino Mills The maritime cultural landscape of a Reconstruction Era Sawmills in Molino, Florida. M.A. Thesis, Anthropology Department, University of West Florida

Hamilton, Donny L.

Hattendorf, John B. (ed)

Hattendorf, John B. (ed)

Hocker, Frederick M. and Cheryl A. Ward

Horn
n.d. This Fascinating Lumber Business. Information Conservation Inc.

Hume, Noel Ivor
King, M. Luther  

Lenihan, Daniel J.  

Leone, Mark P.  

MacGregor, David R.  

Manuel, Dale  

McEwen, W. A. and A. H. Lewis  

Moore, John Hebron  

Muckelroy, Keith  

Padfield, Peter  

Panshin, P. B. Proctor, A. J., E. S. Harbar, W.J. Baker  

Pearce, George F.  
Phillips, John C.
1997 Archaeological Data Management Systems Utilized by the University of West Florida Archaeology Institute. Paper presented at the Society for Historical Archaeology Conference, Corpus Christy, January.

Plog, Fred T.

Pollard, Edward John

Raab, Mark L. and Albert C. Goodyear

Ransley, Jesse

Raupp, Jason

Rediker, Marcus

Reiger, John F.
1971 Florida After Secession: Abandonment by the Confederacy and its Consequences. 50(131):870-871.

Robb, J.E.

Robinson, William Otto

Rucker, Brian R.
1990 Blackwater and Yellow Pine: The Development of Santa Rosa County, 1821-1865. UMI Florida State University, Dissertation.
Rucker, Brian R.

Rucker, Brian R.

Rule, Nick

Ruppé, Reynold J.

Sams, Adrianne B. and John C. Phillips

Santa Rosa County

Staniforth, Mark

Steffy, J. Richard

Sutton, Leora M.

Taylor, Paul

Throckmorton, Peter
1969  Shipwrecks and Archaeology: The Unharvested Sea. Little, Brown, and Company, Boston, MA.
Throckmorton, Peter

Throckmorton, Peter (ed)

Tomczik, Adam

Trigger, Bruce G.

Watson, Patty Jo

Westerdahl, Christer

Willis, Elaine C. with Peggy W. Toifel and Dr. Lea Wolfe

Woolsey, Nathan