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## Making History Stick: Representations of Naval Stores in North Carolina Museums

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Making History Stick: Representations of Naval Stores in North Carolina  
Museums

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Raleigh, North Carolina

Bachelor of Arts, University of North Carolina at Chapel Hill, 2010

A thesis presented to the Graduate Faculty  
of The College of William & Mary in Candidacy for the Degree of  
Master of Arts

Department of Anthropology

College of William & Mary  
May, 2017



## APPROVAL PAGE

This Thesis is submitted in partial fulfillment of  
the requirements for the degree of

Master of Arts



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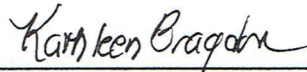
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## ABSTRACT

This thesis explores the extent to which three North Carolina museums, the North Carolina Museum of History, the Cape Fear Museum, and the Maritime Museum at Southport, represent the state's history of naval stores. Being a crucial part of North Carolina's past that is frequently ignored in the formal education system, naval stores should be highlighted in museum exhibits about the state's history and heritage. A critical analysis of these exhibits shows how these representations form a significant part of civic engagement and suggests improvements that would enhance the education of audiences about the importance of naval stores to the historical development of the state.

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This Master of Arts is dedicated to my husband, Steve, who has supported and encouraged me in the pursuit of my life and career goals.



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## CHAPTER 1. INTRODUCTION

What is a tar heel? In my experience, research projects begin with a fairly simple question like this that develops into a quest for understanding something that is not so simple. What began as an interest in the history of my home state has evolved into a passionate struggle to make the study of naval stores a priority in the presentation of North Carolina's history in the existing exhibits in state and local history and technological museums (Goode 1896). North Carolina is known as the Tar Heel state due to its lengthy history in the naval stores industry. The category of naval stores encompasses tar, turpentine, and their derivative products including pitch, rosin, and spirits of turpentine. To this day, nobody knows who coined "Tar Heels," but the term became popular after the Civil War and most likely originated from the fact that North Carolina produced the majority of the world's naval stores for about 150 years (Wrench 2014; *North Carolina Museum of History* 2016).

Although longleaf pine forests covered much of eastern and central North Carolina when European settlers arrived in the seventeenth century, it was not until the early eighteenth century that the English settlers began to exploit this natural resource for profit. Being particularly fire-resistant was a key trait that allowed the longleaf pines to dominate the sandy soils amid both natural forest fires and controlled burns by Native Americans looking to clear underbrush for a better hunting environment (*Cape Fear Museum of History and Science [Cape Fear Museum]* 2016; Earley 2004; Outland III 2004). So, when the English settlers arrived, longleaf pine forests were a ripe source of income. At first, due to

trade agreements with England and her other colonies, North Carolina focused its naval stores production on tar. Growing quickly, North Carolina dominated the naval stores industry with subpar tar until the early nineteenth century, when the invention of rubber and camphene led to the rise of turpentine production and distillation over its sister product.

Unfortunately, the history of North Carolina's involvement in and dependency on the naval stores industry is not as well known as it should be. In the formal, public education system in North Carolina, tobacco and cotton are attributed with being the main source of the state's agricultural and economic development. Although the Common Core curriculum of Social Studies leaves room for instructors to include the historical and economic value of naval stores in North Carolina, the supplemental teaching guides encourage a focus on traditional agriculture (Common Core State Standards Initiative 2010).

It is likely that ignoring naval stores in schools is partly a result of the lack of research on the topic. Robert B. Outland III's "Tapping the Pines" (2004) provides comprehensive documentation of the naval stores industry in the American South. Based on my research, I concur with Outland III's (2004) assessment that "naval stores and other timber products production have received little attention in studies of the South" (Outland III 2004:5). Outland III (2004) attributes this unfortunate reality to the fact that the rural nature of naval stores production did not aid in developing the South into the industrialized urban cities of the North. Perhaps naval stores production is too messy for historians and too refined to rural areas of North Carolina for archaeologists to devote their

energies to studying. Naval stores are a form of untraditional agriculture because they blend traditional Southern agricultural practices of cotton and tobacco plantations with industrial manufacturing processes for distillation of turpentine similar to those used by urbanites in New England. Instead of attempting to reconcile agriculture and manufacturing within a single commodity, historians and archaeologists may find it simpler to address these diverse themes through different products. This lack of interest in the naval stores industry by historians and archaeologists is also seen in educators who continue to promulgate the fallacy that tobacco and cotton played a bigger role in the pre-Civil War history of North Carolina than tar and turpentine.

Museums play a crucial role in the field of anthropological and archaeological study and research of naval stores. The Oxford English Dictionaries (2017) defines anthropology as “the study of human societies and cultures and their development.” Museums of any type, but for the purposes of this paper, history museums, offer interpretations of cultures through their exhibits of material culture (Forloney 2015). Forloney (2015), who has over twenty years of experience in museum anthropology, argues that successful museums should create a conversation between the visitors and the material culture. According to Forloney,

“As [anthropological] practitioners, we must critically analyze the various processes, relations of power, and other variables influencing representation as well as make more transparent to the general public the assumptions, rationales, and compromises that

lead to a finished display as opposed to presenting them as unequivocal statements. The objective of any exhibition or educational program should be to enable all audiences to actively engage cultural material in order to access information, acquire new knowledge, and create personal meaning” (Forloney 2015:63).

History museums in North Carolina should offer multi-vocal and multi-cultural views throughout their exhibits in order to disseminate historical knowledge and interpretations about naval stores to their audiences in a manner that encourages participation (Vogel 1991; Karp and Kratz 2014). Instead of addressing the multiplicity of cultures through contained sections, museums could use naval stores as a way to highlight how varying cultures were forced to work together to produce a profit.

Since the public education system glances over the impact of naval stores on North Carolina’s economic and social development, it is the duty of the state’s history museums to provide supplemental information and correct any erroneous notions espoused in the classroom (North Carolina [NC] Department of Public Instruction 2013a; North Carolina [NC] Department of Public Instruction 2013b). According to the American Alliance of Museums (2000), “museums serve society by advancing an understanding and appreciation of the [...] cultural common wealth through exhibitions, research, [...] and educational activities” (American Alliance of Museums [AAM] 2000:10).

In this thesis, I explore the extent to which three North Carolina museums uphold the AAM’s (2000) educational goals. In particular, I focus on how The

North Carolina Museum of History, The Cape Fear Museum, and The Maritime Museum at Southport represent the history of naval stores in their own ways. Finally, I critically analyze how these representations form a significant part of civic engagement by educating visitors through exhibits that highlight the importance of naval stores to the historical development of the state.

## **CHAPTER 2. SOCIAL AND ECONOMIC HISTORY OF NAVAL STORES**

Understanding the extent of the history of naval stores and the important role they played in North Carolina's social and economic development provides background critical to my analysis of history museums that claim to preserve and present the state's heritage. During the colonial period (AD 1653-1776), North Carolina's Cape Fear region in the eastern part of the state was home to massive expanses of longleaf pine tree forests, which thrived in the sandy soils of the coastal plains. Longleaf pine is one of the best producers of tar and turpentine, and European settlers in the region took full advantage of this fact. Instead of the popular tobacco or food plantations of Virginia and rice plantations of South Carolina, North Carolina settlers created plantations devoted to tar and turpentine production and distillation (Lee 1952). Because one of the main uses for tar and turpentine, and their derivatives (pitch and rosin), was in the shipbuilding industry, these commodities were known as naval stores.

The dense and expansive longleaf pine forests in Eastern North Carolina made the Cape Fear region a prime location to get involved in the naval stores industry (Johnson 2006). The heavy production of tar on North Carolina's eastern plantations allowed the state to become the leading exporter of naval stores from 1720 until 1870 (Earley 2004). Brunswick (see Figure 1) was the first major port in North Carolina to export naval stores due to its convenient location near the mouth of the Cape Fear River (Outland III 2004). Raw tar and turpentine were unwieldy, so the convenience of being located on the Cape Fear River meant fewer expenses to plantation owners when bringing their products to market. Tar,



fresh from the kiln, would be barreled at its collection site and hauled over land by draft animals to the Cape Fear River or one of its tributaries. From there, barrels were loaded onto rafts that met up with larger ships to bring the materials to the port at Brunswick or Wilmington (Lee 1952; Outland III 2004).

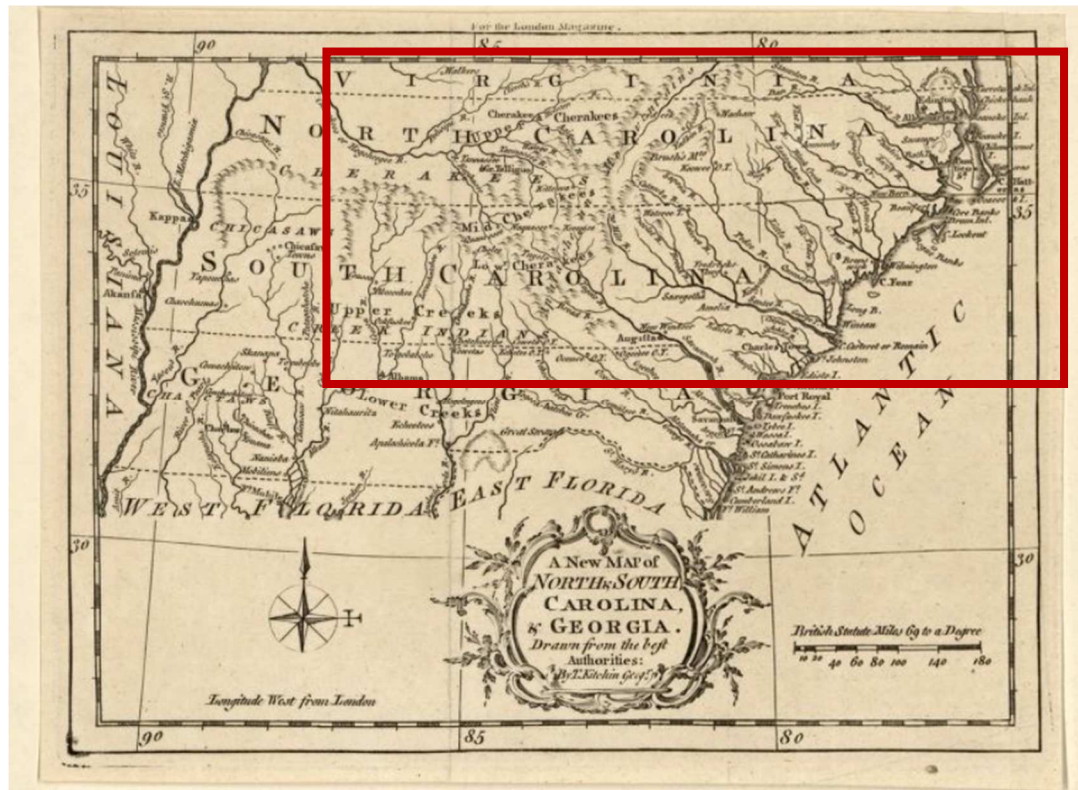


Figure 1: A new map of North & South Carolina, & Georgia (Kitchin 1765). Retrieved from the Library of Congress (red box is not part of official map)



Figure 2: Closer view of the area enclosed in the red box from the above map. Displays important cities, including New Bern, Wilmington, and Brunswick (circled in red)

**Trade:**

Prior to the American Revolution, North Carolina produced approximately sixty percent of the colonies' naval stores (Johnson 2006). Most of these pre-Revolutionary naval stores were shipped to England or traded with the Caribbean colonies on England's behalf (Johnson 2006). Due to some trading dilemmas with Sweden, England passed *An Act for Encouraging the Importation of Naval Stores from America* in 1704 which reduced the net shipping charges colonists had previously been required to pay for exporting naval stores to England or her colonies. In the wake of this act, England imported a yearly average of 61,488 barrels of tar and pitch from the American colonies between 1716 and 1724. From a colonial perspective, this enticement made shipping naval stores, in particular tar, from North Carolina to England more cost effective than exporting their product to other countries. Between 1705 and 1718, North Carolina alone exported a total of 134,212 barrels of pitch and tar, the majority of which was shipped to England (Outland III 2004).

In the mid-eighteenth century, Brunswick, North Carolina, shipped predominantly tar and pitch to the British homeland while the majority of exports from Wilmington went to New England and the British Caribbean islands (Lee 1952). Due to the focus on tar and turpentine production on plantations in the Lower Cape Fear region, the majority of landowners relied on imports of necessity items, including food, clothing, weapons, and medical supplies for themselves and their enslaved workers (Lee 1952). The eighteenth century North Carolina ports of New Bern and Wilmington were heavily involved in international

as well as coastal trading as can be seen by the types of ships that left port (Crittenden 1931). According to port logs in Edenton, North Carolina, the years 1763-1789 saw only 11 percent of smaller shipping vessels (schooners and sloops) journey from Edenton (formerly Port Roanoke) to the West Indies, while almost 35 percent of these clearing Port Brunswick sailed for the West Indies (Crittenden 1931). However, larger vessels, such as brigs, were more commonly employed for mercantile trips to the West Indies in the late eighteenth century. Four out of five brigs from New Bern and one out of four from Brunswick sailed to the West Indies (Crittenden 1931). It is easy to identify the origination of some imports. For example, rum was imported to Brunswick and Wilmington from the British West Indies where it was produced in distilleries on large sugar plantations (Lee 1952). A typical shipment from Wilmington to Jamaica would have likely included naval stores (tar, turpentine, and pitch), corn, tobacco, lumber, staves (pipes), beans, peas, rice, pork, butter, and fish. Return commodities from the West Indies frequently included sugar, rum, coffee, salt, and cotton, with rum being of the highest value due to its cash-like qualities followed by salt for food preservation (Keith 1948).

The importance of tar, pitch, and turpentine production is evidenced by the extremely high export levels. North Carolina produced and shipped nearly half of the colonial production of these naval stores to England from the early eighteenth century until the Revolutionary War (Lee 1952). After the Revolutionary War, trade with the Caribbean islands became of crucial importance. Although trade with Danish, Dutch, and French Caribbean islands was now legal, some North

Carolínians, among them the Blount family, smuggled naval stores and other commodities to the islands of the British West Indies as well (Keith 1948).

Outside the plantation system, many merchants in the American colonies offered their services through the sale of imported goods, including rum and sugar from the West Indies (Soltow 1959). As was common in the eighteenth century, one merchant, Riche, utilized correspondents at ports outside of his home-port of Philadelphia, Pennsylvania for his triangle trade. Samuel Cornell filled the role of correspondent for Riche at the port of New Bern, North Carolina. As correspondent, or merchant liaison, Cornell would sell the imported West Indian commodities to local North Carolínians and purchase from them naval stores, beef, and corn to be sold in the Caribbean, in particular, Barbados (Soltow 1959). While Cornell orchestrated trade from afar, another merchant, Captain James Wimble, took advantage of a triangular trade between New England, North Carolina, and the West Indies in the early to mid-eighteenth century (Cumming 1969). Wimble imported Jamaican sugar to Boston where he distilled it into rum. In turn, New England rum found buyers in North Carolina in exchange for naval stores. Before returning to Boston, Wimble's ships brought the naval stores and remaining New England goods to their British comrades in the Caribbean, most frequently Jamaica and Nevis (Cumming 1969).

Continuing trends from the early eighteenth century, naval stores purchased or traded in North Carolina in the second half of the century were often the beginning of a longer journey involving multiple changings of hands. For Lopez, a Rhode Island merchant in the 1760s and 1770s, shipping and trading

was a trial and error process (Platt 1971). His early trips were based on acquiring naval stores in ports, such as New Bern, NC, and then shipping them to England where the cargo and ships were sold for profit before they reached the British local markets. However, he quickly went into debt with English creditors due to his being an absentee trader. Therefore, Lopez began sending his ships from Rhode Island to North Carolina's ports as a midway trading stop at which to obtain tar, pitch, and turpentine before continuing to their destination in the West Indies. The return trip brought West Indian-produced molasses, sugar, and rum along with other manufactured goods back to New England, in this case Rhode Island, so that some could make the next voyage to North Carolina to be traded for salted fish, lumber, and naval stores. North Carolina's naval stores were anxiously awaited in Jamaica and the other British Caribbean islands where they were exchanged for the typical molasses, sugar, and rum to resell in New England as well as for Spanish silver and English bills to pay off Lopez's debts in England (Platt 1971).

After the United States of America declared itself an independent nation and freedom was achieved, North Carolina was no longer restricted to trade with England and established more profitable trade relations with other nations (Outland III 2004). The state's naval stores production continued to expand through increased demands by other American states as well as Caribbean colonies seeking trade with lower tariffs (Outland III 2004; Toth 1976). But like any young nation, the newly formed United States encountered challenges with respect to trade. There was disagreement among policymakers as to how much

power the federal government should be able to exercise over trade with foreign and domestic entities (Toth 1976). The British restricted American trade to their West Indian colonies under the 1783 Order in Council, which stated that,

“American vessels would now be excluded from the British islands for an entire decade, and such staples as fish, beef, pork, butter, and lard were generally not permitted entry even in British ships. However, British vessels could carry any naval stores, grain, livestock, and lumber from the United States. All West Indian products going to the United States, of course, would be carried in British ships” (Toth 1976: 424).

Although the British West Indian ports were closed to American ships from the end of the Revolution until 1793, trade with other West Indian colonies continued (Toth 1976). By 1788, North Carolina’s main exporter of naval stores was Port Roanoke, and the majority of exported goods from there were shipped to the northern states (Outland III 2004). In that year, about fifty percent of exports from the port of Wilmington, NC were shipped to the West Indies, forty percent of North Carolina goods were shipped north to New England, and only ten percent made its way across the Atlantic to England (Randall 1968). The last decade of the eighteenth century saw steady demand for and exportation of naval stores from Wilmington, but the cost of imports increased (Randall 1968).

One example of the trials North Carolinians faced post-Revolution can be represented by the Blount family. The Blounts were a prominent family in North Carolina in the 1790s who had invested significant time and effort into the

shipping trade as is evident from their self-proscribed status and profession as merchants (Keith 1937). Although the majority of their exports went to England prior to the American Revolution, at the end of the eighteenth century, the Blounts pursued the all-important West Indian trade.

Unfortunately, challenges with seafaring trade were unavoidable during a period when correspondence took the same time as a human to travel between places. Letters that took anywhere from a week to three months could contain information that did not hold true by the time a shipment arrived, and prices and demand for commodities changed with each docking ship. During the voyage of a shipment by the Blount family to Europe (Cadiz and Paris) in 1792, tar changed price and began selling much more rapidly in Paris than the less-needed turpentine and pitch, which had also been shipped with the expectation of buyers in Europe. Thus, the barrels of rosin, a byproduct of distilling turpentine, were returned to North Carolina unpurchased (Keith 1937).

Similarly, due to the seasonal nature of turpentine and tar production on North Carolina plantations, these naval stores also arrived at port markets for export seasonally, which caused a challenge with traders from New England who often had to wait for extended periods of time for their products to arrive at port and be loaded onto shipping vessels (Platt 1971). This reduced the number of circuits a ship could make from New England to North Carolina to the West Indies and back in a year. In these circumstances, wealthy merchants with many ships had a significant advantage over merchants who owned or commissioned only one ship (Keith 1937). From a local perspective, North Carolinians knew

when merchants were shipping and would request certain items be acquired for them. One Raleigh resident, Will Polk, provided the Blounts with a shopping list of items to purchase for them in the West Indies, including 30 gallons of Old Jamaica rum, coffee, loaf sugar, best Imperial Tea, quart decanters, pint tumblers, and glasses (Keith 1948). Similar requests included items such as coarse salt, molasses, and European cloth used for making clothes for the enslaved (Keith 1948).

In just sixty years post-independence, the naval stores industry in North Carolina had grown to account for almost ninety-six percent of the country's tar and turpentine production, with approximately 800,000 barrels of turpentine worth about two million dollars. (Johnson 2006). The nineteenth century saw a continuation of naval stores production in North Carolina as farmers and planters bought lands farther west into the Piedmont region. Trade was made easier with the completion of roads and railroads running both east-west and north-south (Carlton 1990). In addition to tar and turpentine, landowners raised cotton, corn, and cows among other provisions for export (Randall 1968). However, naval stores continued to be the number one export in North Carolina through the antebellum period (Carlton 1990). Records from 1860 show that approximately ninety percent of tar and turpentine produced in the state was exported to New England and the West Indies (Carlton 1990).

Unfortunately, turpentine production is an irreversible extraction process, so once trees were bled, they were useless for anything except lumber. The average stand of longleaf pine trees could be used to produce turpentine for



approximately 12 years. Once the trees were drained, turpentine farmers emigrated from North Carolina further south to Georgia and Alabama in search of fresh longleaf pine forests. By 1900, North Carolina's natural supply of tar and turpentine had more-or-less dried up, and producers did not hesitate to migrate south to continue their specialized production (Carlton 1990).

Ultimately, North Carolina, as a colony and later a state, took a different path toward prosperity than its neighbors. Instead of pursuing tobacco and rice agriculture like Virginia and South Carolina respectively, North Carolinians ran plantations that produced tar and turpentine. Extensive stands of longleaf pines in the Cape Fear region were prime real-estate for wealthy newcomers. Enslaved workers spent months on end isolated in the pine forests to collect the raw material for turpentine production. Early eighteenth century ports on the North Carolina coast, including Brunswick and Wilmington, witnessed significant trade with both England and the British West Indies. After trade with England slowed on account of American independence, local merchants continued using Wilmington as a port in the triangle trade between New England, North Carolina, and the West Indies. Sugar and molasses were coveted by New England for their rum production, which, along with food and clothing supplies, would be sold in North Carolina for naval stores that completed the triangle when they arrived in the West Indies. North Carolina production and trade continued in this manner until the pine forests were depleted around the turn of the 20<sup>th</sup> century.

**Production:**

Although naval stores production is often lumped into the industry category, the process in North Carolina more closely resembled the organization of agricultural production (Outland III 2004). Wealthy, rural planters with hundreds to thousands of acres of longleaf pine forests sent their enslaved workers into the forests to collect raw materials and process them into finished products (Outland III 2004). According to a 1765 traveler journeying through North Carolina, 3,000 pine trees, tended by enslaved workers, could produce 100 barrels of raw turpentine (Outland III 2004).

Longleaf pines thrive in the sandy, infertile soils of the North Carolina coastal plains by genetic design (Outland III 2004). Longleaf pines have a thick bark that insulates the heart of the tree from the heat of forest fires, allowing this species of pine to survive where both hardwoods and other pines would be consumed by the flames. In an area with little underbrush due to fires, the large, heavy seeds of the longleaf fall close to the parent tree “on fire-cleared mineral soil and begin [their] taproot growth before [their first] winter” (Earley 2004: 23). While most hardwoods have root systems that extend out from the trunk to access the fertile topsoils, the longleaf pine trees drive their taproots deep into the subsoil where they can transfer the nutrients, which have leached out of the infertile topsoil, back up into the trees (Outland III 2004).

In the early days of North Carolina’s foray into the naval stores industry, the method for tar production was fairly crude and produced a subpar raw product (Earley 2004). Before England turned to its colonies for naval stores, they received high-quality tar from Sweden. Swedish tar, or green tar, was

produced by removing the bark from about eight feet of the base of Scotch pine trees, leaving only enough to keep the tree alive. The pines would send resin to the sites of the missing bark in an attempt to save and protect the trees. One to two years after the initial bark-removal, the Swedes cut down the entire tree in order to sweat the tar out of the base using in-ground kilns. The Stockholm Tar Company, having a monopoly on tar, used this extremely wasteful process to produce a small amount of expensive tar before England passed a navigation act in 1704 incentivizing the production of naval stores in America (Earley 2004; Outland III 2004).

Although tar production was not as labor intensive as turpentine production, it required vigilant and some strenuous work by at least two people. Typically, those who worked on tar and turpentine plantations were enslaved Africans and African-Americans. According to Ernest Bannerman, an African American whose ancestors produced tar in the nineteenth century, the tar production process would have taken two slaves about three weeks to produce tar from start to finish (Earley 2004). In order to have a place to put the wood that will be fired, the first step is the creation of the tar kiln. The size of the kiln determines how much tar can be extracted during a single burning, but the shape is of less crucial importance. Tar kilns are typically either rectangular or oval and anywhere from fourteen to thirty feet in diameter. Due to the permeable, sandy soils, it was necessary for the slaves to dig at least a foot into the ground until they hit clay subsoil, which was not as porous and so minimized the amount of tar that would be lost to seepage. Lengthwise into the clay floor of the earthen

kiln, a gutter was dug out to guide the liquid tar from the smoking pine boughs to a collection pit in the center (Earley 2004). Some kilns ran another gutter from the collection pit in the kiln to a trough outside the kiln to cool enough to be barreled (Outland III 2004). The entire kiln-building process would take the two slaves two days to complete, and fortunately, some kilns could be reused if there was enough wood nearby to warrant multiple burnings (Earley 2004).

Next, the wood was collected, a process that entailed about twelve to fourteen days of trekking through the forests. The ideal wood for tar production is dead wood saturated with resin, called lightwood, that was found in the form of old stumps, knots, and limbs that have fallen from the longleaf pine trees. Slaves gathered and cut the lightwood into two to three foot long two-by-four cords before piling them into the kiln. A thirty-foot kiln could hold a pyramid of 180 cords of lightwood, from which over 5,700 gallons of tar could be collected in barrels. Burning the lightwood was the most important and precise part of the tar production process (Earley 2004). Clay and pine straw covered the lightwood pyramid, with only an exhaust hole at the top of the kiln to aid in minimizing the oxygen that could get to the smoking wood. Once the lightwood was lit through the exhaust opening, the vigilant workers must monitor the kiln night and day to ensure that the temperature is consistently hot enough to make the lightwood “sweat,” but not so hot as to catch the wood on fire and burn off the tar (Earley 2004; Outland III 2004). The tar sweats out of the dead lightwood and flows along the gutter into the pit for collection. The smoking continued until all the tar was

extracted and the wood had become a large pile of charcoal (which could then be sold to blacksmiths for their forges).

Once the tar was collected from the hole in the kiln floor and placed into barrels, it could either be shipped down the Tar, Black, or Cape Fear Rivers to the port at Wilmington or Brunswick for export. Some tar remained with the planter to make pitch by boiling it until it became extremely viscous and sticky. Pitch would then be barreled separately and sold as an export commodity or used for patches around the plantation (Earley 2004). In order to produce a single barrel of pitch prior to 1724, two barrels of raw tar had to be boiled, which led planters to seek profit for their subpar, raw tar instead of a lesser quantity of higher quality pitch. However, when the British navy began rejecting the poor-quality tar and decreased the shipping costs of pitch, some planters were enticed to focus on producing and selling pitch (Outland III 2004). Still, tar was the number one export from North Carolina from the colonial period until about 1830, when the demand for spirits of turpentine increased significantly upon discovery that it was useful as a solvent for the New England rubber industry and as an illuminant due to its highly flammable properties (Perry 1968).

Turpentine production in North Carolina was a year-round endeavor due to the state's relatively mild weather patterns. Upon discovery of a pine forest with relatively poor soil quality, which allowed for longleaf pine trees to grow tall without being crowded out by deciduous trees, the turpentine businessmen sent slaves into the forests. From November through March, when traditional agriculture was on hold for the winter, slaves cut boxes into each adult longleaf

pine tree. Using a specialized axe with an elongated head, deep holes were cut into the base of the tree averaging three to four inches deep and ranging from eight to fifteen inches wide (Earley 2004; Outland III 1996; Outland III 2004). This box could collect one to two quarts of raw turpentine, or resin. The trick with boxing was to ensure the tree's heart was not wounded in the process for this would cause an insufficient supply of resin and premature decay of the tree. On larger trees, those over two feet in diameter, as many as three boxes could be cut, as long as about four inches of bark remained intact between the boxes. Leaving at least one third of the tree face untouched was necessary to ensure maximum sap and resin production (Outland III 2004).

Slaves were required to box trees according to their masters' specifications. The height of the box off the ground and the side of the tree boxed, among other things, were completed in accordance with the Masters' wishes. Being a labor intensive job, boxing requires both strength and skill for slaves to meet expected quotas based on their level of experience. Beginning boxers on average had to cut fifty boxes per day, while experienced boxers were required to cut anywhere from 75 to 100 boxes per day. However, non-experience factors also came into play and impacted the number of boxes that one individual could cut on a given day. For example, the further apart the trees were spaced, the more time slaves spent walking between trees, so less time was available to cut boxes. Similarly, the size of the trees played a role because larger trees, that could hold more boxes, meant less time walking and more time boxing. Weather and time of year (hours of daylight) also impacted the number of

boxes cut (Outland III 2004). The cumulative effect of the factors determined whether or not slaves could meet their daily or weekly quotas.

Once spring descended in early March, the boxing axes were traded in for standard axes, used to corner the boxes. Due to its time-consuming nature, beginners could corner between 500 and 600 boxes per day, with experienced workers cornering 600 to 800 boxes each day. Cornering entailed cutting one-inch triangles into the upper corners of the boxes, which acted as rails along which the resin rides into the box for harvesting. Cornering created the first wound that produced resin flow, and the raw gum dripped into the box until the resin congealed in the wound (Outland III 2004).

Chippers and dippers worked simultaneously from March through October to ensure a continuous flow of resin into the box (Earley 2004). Chipping occurred roughly once a week from April until mid-October, but was especially critical in warmer weather when the resin flowed more freely. During these months, chippers used a “circular piece of iron with a sharp lower edge and a two-foot handle,” commonly called a hack or shave, to chip a one-inch-wide, “V”-shaped gash into the tree barely deeper than the layer of bark (Outland III 2004). These streaks angled up and away from the corner of the boxes so that resin flowed from the newest wound along each of the old wounds and down into the box. Streaks wound the tree just enough to trigger the protection response in the pine that sends resin to the site of the wound to protect the tree from insects and the elements. Resin flows through tiny vertical and horizontal resin ducts in the pine tree, so chipping signals the tree to send resin directly above the streak

(Earley 2004). Chipping required very skilled workers who could chip one- to two thousand tree faces per day. Each year, the faces' streaks ascended as much as two feet higher than the previous year. Once the scraped face of the tree was above shoulder height, chippers traded the shorter hack for a puller – a sharp metal scraper attached to an extra long handle. Trees continued to produce enough resin to be profitable until the streaks reached twelve to fifteen feet high (Outland III 2004).

With each streak in the face of the pine tree, raw gum resumed its flow into the box. Depending on weather factors that affected viscosity of the resin, the gum was dipped out of the box anywhere from four to seven times per harvesting season (Outland III 2004). A handled, flat, spade-shaped blade was shoved into one side of the box, scraped along the bottom and up the other side “all in one quick motion” to extract the raw gum (Outland III 1996: 36). Once the resin adhered to the metal dipper, the worker scraped the tool along the iron-lined bucket's edge to dislodge the resin, adding it to the transportable bucket. When the bucket was full, it needed to be brought to a 40-gallon barrel where it was turned upside down to drain. While that bucket was left to empty the product, another empty bucket was taken to where the dipper had left off and the cycle continued until early November (Outland III 2004). Most plantation owners in North Carolina expected each dipper to fill between 175-300 barrels per season (Outland III 1996).

Once the last tree had been dipped and all the raw turpentine barrels had been sent to a distillery, the enslaved workers began the process of scraping the



dried gum, or resin, off the face of the pine trees (Outland III 1996). A thin, sharp blade attached to a long handle was used to dislodge the scrape from the tree into a scrape box – a two-legged square box, measuring roughly one and a half feet in diameter, whose legless side was leaned against the tree trunk for support (Outland III 1996; Outland III 2004). Because the majority of the spirits evaporated due to exposure to air for eight to nine months, the value of scrape was only half that of the raw turpentine. Therefore, the boxes of scrape were sent to the distillery where they were pounded into the barrels of rosin, the less profitable, sister derivative of spirits of turpentine (Outland III 1996).

Prior to the 1830s, distilleries were located in major cities that were near a water source, such as Wilmington, NC, because the still machinery was made of iron, which was too heavy and expensive to be situated directly on the turpentine plantation (Earley 2004). Still workers were the most skilled of the turpentine producers and were typically either paid white males or enslaved black males. Most often, the head distiller was a white male who earned approximately \$600 a year, and the other still workers were skilled slaves.

Two-story distilleries were common because the furnace needed to be on the first floor, underneath the vat of raw turpentine, which could hold an average of ten barrels of raw gum. When the furnace was lit, the resin, or raw turpentine, began to boil. For approximately two to three hours, the turpentine separated into a pure vapor and water mixture which rose into the worm, or condensing tube, and the remaining liquid rosin. When the vapor was condensed, the liquid spirits of turpentine, which made up 90-95 percent of the mixture, sat atop the water so

it could be easily siphoned off. Truly pure spirits of turpentine were a colorless liquid, but as overheating the raw turpentine was easy, the resulting spirits often had a yellowish tint (Outland III 1996). Once the spirits of turpentine had evaporated out of the resin, only the rosin remained in the vat. Workers drained the rosin out of the still and into a cooling vat through a series of screens that removed wood chips and other impurities that remained. Heated rosin was a liquid and could not be barreled at that temperature without leaking through the cracks between the barrels' boards. Instead, the rosin was cooled, a process that turns it into a very viscous, almost solid, state before being barreled and sold for export (Outland III 1996).

Turpentine replaced tar as “most heavily demanded naval stores product” by about 1830 with the discovery that it could be used as a solvent in the growing rubber industry and as the primary ingredient in camphene, a lamp fuel that is a mixture of turpentine and alcohol (Outland III 2004). Unlike tar, which used already dead longleaf pine trees and their branches, turpentine production required the ultimate destruction of living pine trees. Plantations looking to survive off the export of turpentine utilized much larger numbers of enslaved workers for this year-round production process (Earley 2004).

The coastal towns of Washington and New Bern, North Carolina, were among the first areas to take advantage of this new demand and began production of raw turpentine by tapping the living longleaf pine trees (Outland III 2004). In 1845, Wilmington, North Carolina was home to thirty stills that produced a daily average of 500 barrels of rosin and 4,000 casks of turpentine spirits.

Within seventeen years from the switch away from tar to turpentine, 150 stills were located across North Carolina. The naval stores industry expanded to the west as cotton prices fell drastically in the 1830s and 1840s, encouraging areas that could sustain traditional agriculture to switch to turpentine production. By 1850, Fayetteville, North Carolina had become the “inland center of the [turpentine] trade” (Outland III 2004).

After 1830, the demand for spirits of turpentine rose significantly, so plantation owners sought for ways to cut costs and increase production (Earley 2004). The introduction of copper for use in stills instead of iron in 1834 caused a drop in the price of distilling turpentine (Outland III 2004). By taking advantage of new copper machinery, which was lighter and cheaper, wealthy turpentine farmers and businessmen moved distilling operations inland, closer to the source of the raw turpentine, and built stills on their own land in order to perform the distilling themselves (Earley 2004; Outland III 2004). This new distillation process allowed for plantation owners to ship barrels of spirits of turpentine or rosin only when they could fetch enough profit at market to make transporting it there worth the time and effort. This brought about an economic shift in mid-nineteenth century North Carolina by introducing a business class who made their money by processing other planters' raw materials into refined products (Outland III 2004; Perry 1968).

Tar, pitch, spirits of turpentine, and rosin have uses that allude to their being termed naval stores as well as a multitude of other uses in homes and on plantations. Tar was used as a weather-proof coating on the outside of homes to

protect the inhabitants from wind and rain. A few extra barrels of tar and pitch were carried on every ship that left port to fix any problems that occurred at sea. It was also used to coat hemp rope, especially the riggings of ships, so that the rope would not decay or unravel due to constant use and weather damage. Rigging was re-tarred every week or two to make it stiff so that it was easier for sailors to climb quickly. Similarly, the undersides of boats were coated in pitch to fill any cracks between the wooden planks of the hull. If the ship sprouted a leak, the captain had to list the ship, to bring the hole above the water level, while a sailor went over the side with a small jar of pitch to patch the leak (Earley 2004).

Turpentine derivatives had endless uses outside the shipbuilding industry. Turpentine spirits were considered an all-purpose home remedy because of their functions as an antiseptic, a cleaning agent for carpets and clothing, and insect and rodent repellent. The demand for turpentine spirits as an industrial solvent skyrocketed in the mid-nineteenth century when rubber production plants in the Northeast boomed. Not only was this commodity useful on its own, but it could be combined with other household products to increase its functionality. For example, by combining turpentine spirits with beeswax, homeowners had a floor polish. However, one of the most popular uses for turpentine spirits was related to its flammable properties. Candlewicks were dipped in the spirits before being coated in wax to ensure the candle would burn longer and brighter. Rosin was not as potent a chemical as the spirits of turpentine and was significantly less expensive, so it was used more frequently by poorer farmers. Due to its waterproof property, rosin was used to coat boots and make soaps. It also

functioned as a sealing wax, allowing farmers to dip their fruits in it to preserve them through the winter months. In combination with boiling water, rosin was used to coat hogs and fowl to make it easier for farmers to remove the hair and feathers before cooking (Earley 2004).

With all of these uses for tar and turpentine, and their derivatives, it is not surprising that naval stores were such a significant part of North Carolina's history, both economically and socially. Plantations in North Carolina were concentrated within the Cape Fear region in the eighteenth and early nineteenth centuries before expanding into the piedmont after the 1830s. Historians and archaeologists have focused on the lives of the elite and enslaved workers at tobacco, cotton, rice, and corn plantations, while naval stores receive attention mainly in shipbuilding and port settings. It is of vital importance to understand the production processes of naval stores in order to put the values of these commodities within context.

### **CHAPTER 3. REPRESENTATION OF NAVAL STORES IN NORTH CAROLINA MUSEUMS**

Museums, according to Nancy Parezo (2015), “bring rigor, accuracy, and validity to the study of cultures and societies,” both past and present (Parezo 2015:10). Museums have thus become centers of authority that disseminate knowledge for both adult and youth edification (Parezo 2015). In line with Parezo’s (2015) argument, education is a key pillar of most history museum mission statements, regardless of where their funding originates (American Museum of Natural History 2017; MacGregor 2015; Smithsonian Institution n.d.). In order to reach “the widest possible audience” (AAM 2000:10), state, regional, and local museums strive to teach visitors of varying ages about the past in an engaging and, frequently, interactive manner. However, museums are also businesses whose continued operation is dependent upon revenue. Some museums, such as the North Carolina Museum of History, place greater emphasis on “cool” displays than on displays of historical significance, whereas other museums, such as The Cape Fear Museum, turn seemingly mundane history into fascinating and interactive exhibits.

The North Carolina Museum of History is one of the most popular history museums in the state with approximately 340,000 visitors per year (North Carolina Museum of History 2016a). According to their mission statement, the overarching goals behind the exhibits at the Museum of History are to “collect[] and preserve[] artifacts and other historical materials relating to the history and heritage of North Carolina in a local, regional, national and international context to assist people in understanding how the past influences the present” (North

Carolina Museum of History 2016b). European settlers in North Carolina relied primarily on naval stores production and trade for their subsistence for over 150 years of the state's relatively short post-European-contact period. As aforementioned, from the early eighteenth century until the Civil War, tar, turpentine, and their derivatives offered North Carolina's wealthy plantation owners a way to maintain their status when traditional agriculture failed in the infertile, sandy soils of the coastal plains. In theory, the size of exhibits at a museum whose mission is to preserve and educate the public on North Carolina's history and heritage should reflect the time period and importance of that aspect of history. However, curators' assumptions about the level of public interest may circularly cause audiences to assume relative importance within exhibits.

*The Story of North Carolina* is the main permanent exhibit at the North Carolina Museum of History in the heart of the state capital, Raleigh. The museum visitors to this exhibit include adults and children, individuals and groups, all seeking, consciously or subconsciously, some combination of education and entertainment. Spatially, the exhibit is divided into thirds: one-third devoted to times prior to the American Revolution (pre-1776), one-third devoted to the time between the American Revolution and the Civil War (1776-c.1860), and the final third devoted to the Civil War through the Civil Rights Movement (1861-c.1960). The first third of the exhibit takes visitors on a journey through time, paying special attention to pirates, the English-Native American conflicts, and tobacco. Out of the twelve sections into which the curators broke the exhibit,

section three, labeled “On the Rough Frontier” begins the discussion of European settlers in the North Carolina colony (North Carolina Museum of History 2011). Although, the earliest Europeans arrived in the seventeenth century, the exhibit focuses on the trials settlers faced in the early eighteenth century. The majority of the artifacts displayed in this room date to the 1700s, when, historically, settlers were incentivized by their home country, England, to produce tar and pitch for export. However, the exhibit does not include a single mention of the naval stores industry that had begun in the North Carolina colony, but instead consistently reminds visitors of the value of tobacco. The second part of “On the Rough Frontier” does acknowledge the importance of trade to North Carolina, but only as it relates to piracy along the coast. Famous pirates, namely Blackbeard, and their exploits receive a room of larger square footage than the first portion of “On the Rough Frontier.”

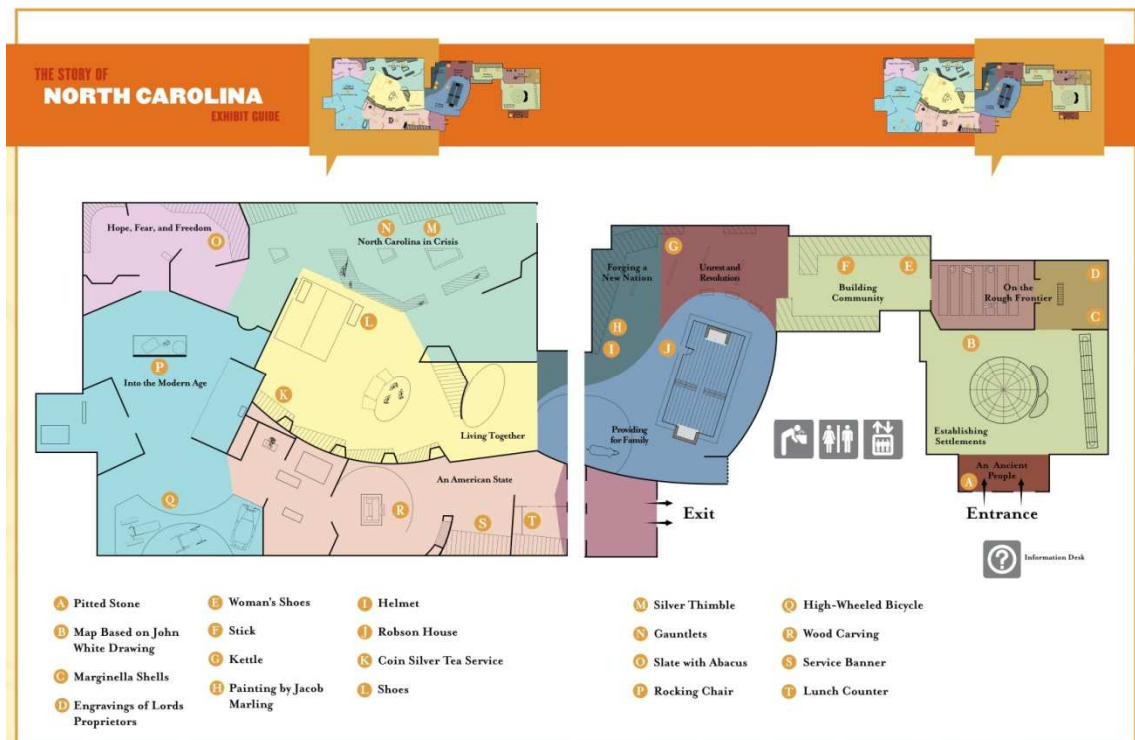




Figure 3: *The Story of North Carolina* Exhibit Map, courtesy of the NC Museum of History

The first mention of naval stores appears in the fourth section of *The Story of North Carolina* called “Building Community,” which directs visitors’ attention to the variety of immigrants and their unique cultural backgrounds and interactions. Naval stores appear as a small reference within larger text regarding the types of exports from North Carolina. The exhibit focuses on the importance of “King Tobacco” as North Carolina’s main cash crop during the early eighteenth century (North Carolina Museum of History 2011).

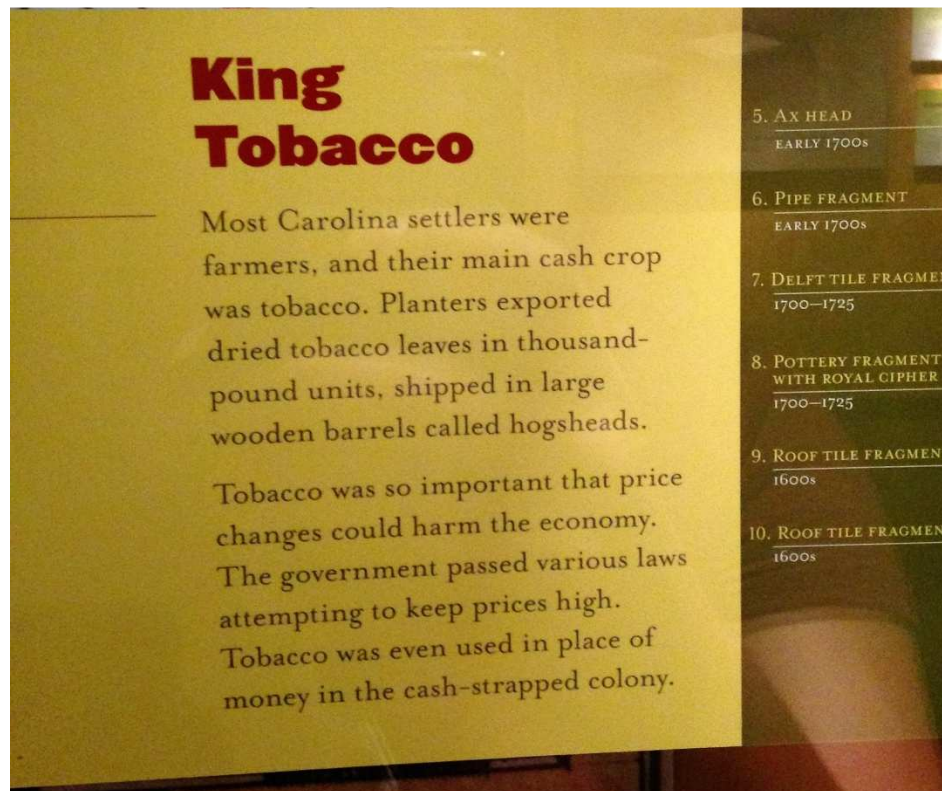


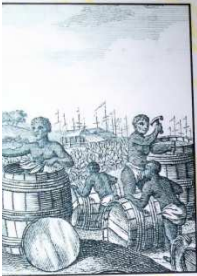
Figure 4: “King Tobacco” at the NC Museum of History

The section on “Building Community” includes immigrants of European and African descent as a basis for the discussion of slavery in North Carolina. The discussion of slavery is introduced to visitors in a block of text titled “Demands for

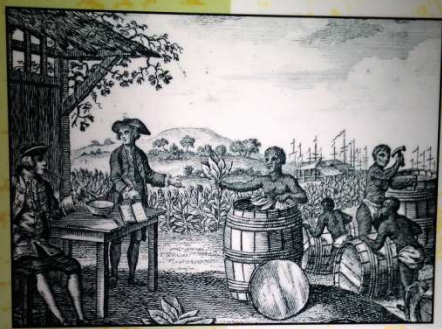
Laborers Drives Slavery” (North Carolina Museum of History 2011). This text mentions tar and pitch as an afterthought to tobacco and rice as the primary, slave-produced exports in the state, which presents visitors with an inaccurate understanding of North Carolina’s beginnings.

## Demand for Laborers Drives Slavery

**T**HE FIRST ENSLAVED PEOPLE in North Carolina were Indians. But as Indian populations dwindled in the early 1700s, white colonists began to look for a new labor source. They found it in African slaves.



Most enslaved Africans in North Carolina were brought overland from Virginia and South Carolina by their owners and forced to work on tobacco, rice, and naval-store plantations in the Albemarle and Cape Fear regions. They were considered property and toiled their entire lives. Their children became the next generation of workers.



*In this image, slaves pack tobacco into barrels called hogsheads for transport to market. Tobacco was one of colonial North Carolina's main exports and required the labor of enslaved workers year-round.*

Virginia and South Carolina owners and forced to work on rice, and naval-store plantations in the Albemarle and Cape Fear regions. They were considered property and toiled their entire lives. Their children became the next generation of workers.

Figures 5, 6, and 7: “Demand for Laborers Drives Slavery” at the NC Museum of History

Throughout the next two sections, “Unrest and Revolution” and “Forging a New Nation,” there are no discussions on the impact the Revolutionary War had on trade and naval stores exports. Section seven, “Providing for Family,” would

be a likely location within the exhibit to discuss the importance of tar and turpentine production to North Carolina's economy. However, this section offers a view into a "typical 1830's farm" that grows corn and tobacco (North Carolina Museum of History 2011). This section shows visitors that the majority of North Carolinians were poor white farmers who relied on self-sufficient plots of land to survive, and sometimes harvested tar and turpentine as a way to supplement traditional three-season farming. This smaller section presents the most common way of life for early nineteenth century North Carolinians, but still lists naval stores as an afterthought though they continued to be the state's leading export.

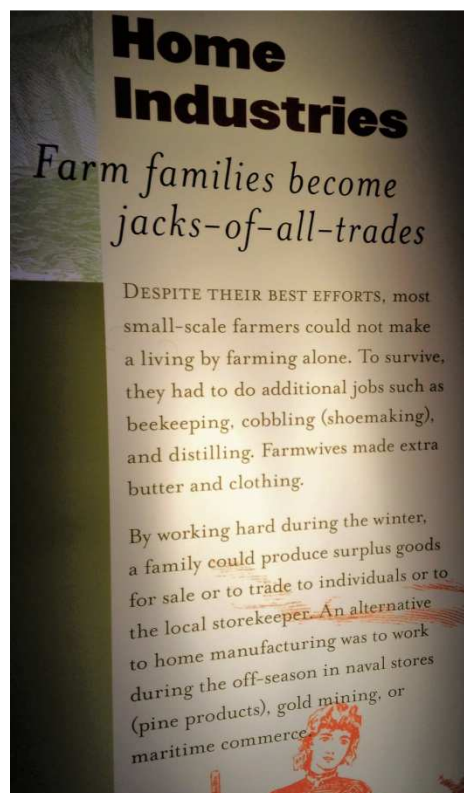
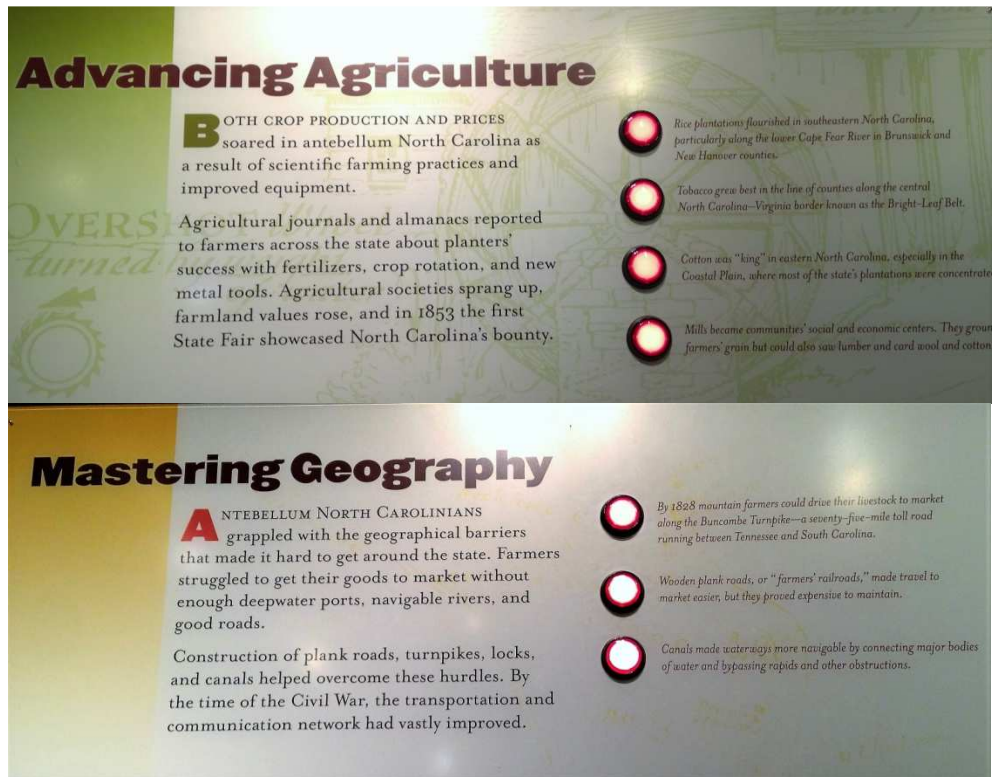


Figure 8: "Home Industries" at the NC Museum of History

Finally, two-thirds through *The Story of North Carolina*, the exhibit offers a section that includes information about naval stores in more detail than the previous afterthoughts. "Living Together" provides information about North

Carolina's economy in the mid-nineteenth century, leading up to the Civil War.

The main displays in this section explain how transportation and agricultural improvements aided the economy with respect to rice, tobacco, grain mills, and especially cotton.



Figures 9 and 10: "Living Together" interactive map at the NC Museum of History

However, the exhibit failed to acknowledge the substantial mid-eighteenth century drop in cotton prices that drove farmers toward the turpentine industry as a way to increase profits. The section's introductory text to "Goods of the Land" supports visitors' preconceptions that traditional agriculture was dominant, but it was not until the early 1860s that the longleaf pine tree resource in North Carolina was nearly depleted and cotton, corn, and grains became the major exports. The exhibit offers insight into slave life during the antebellum period, but only so far as slaves participated in traditional, field agriculture. No mention is

made in the exhibit of the extent to which wealthy plantation owners sent their slaves into the pine forests to build tar kilns or box the living pines for turpentine.

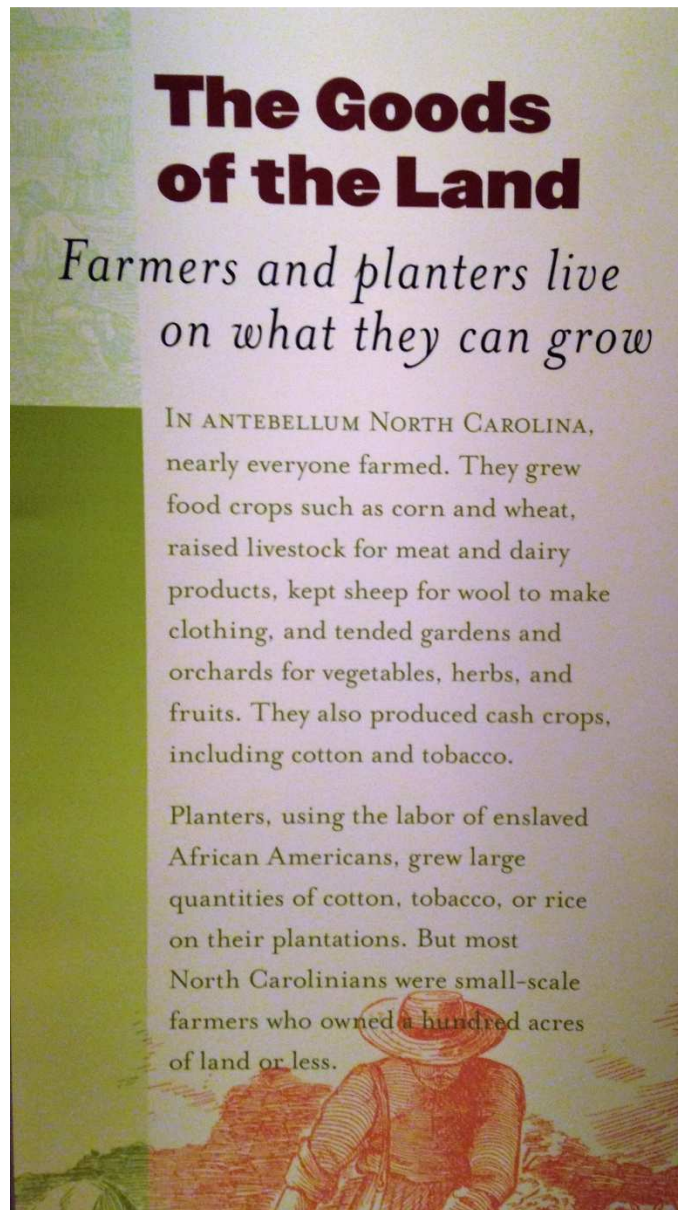


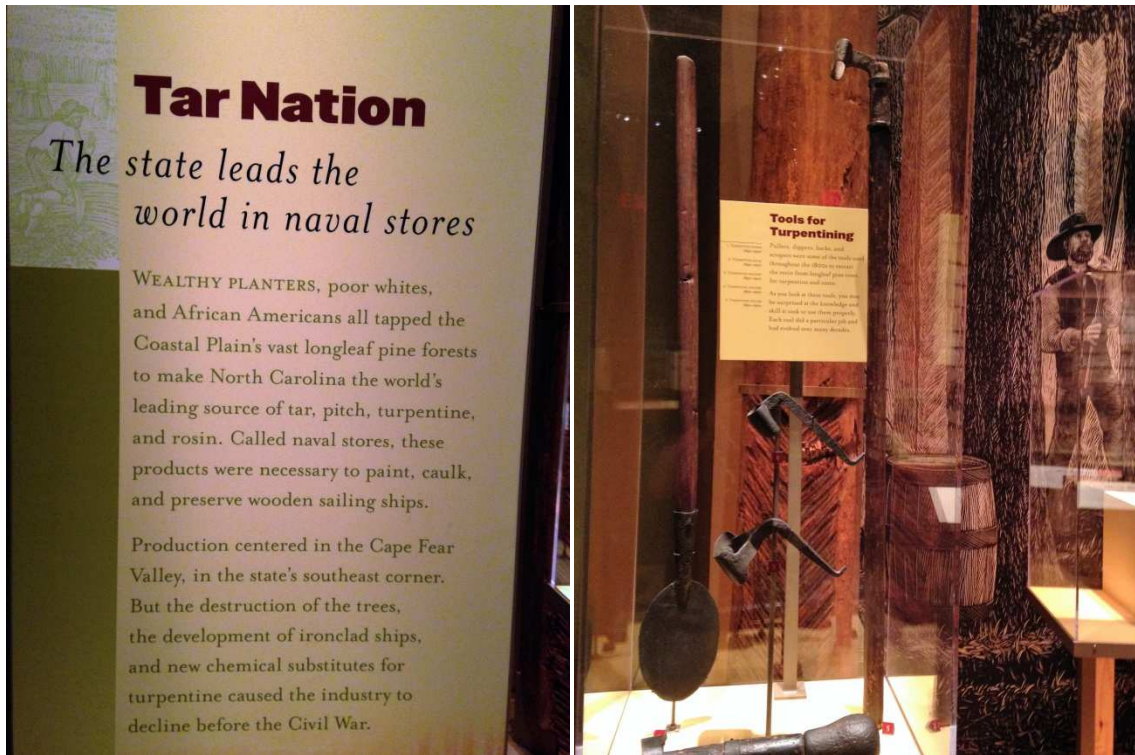
Figure 11: "The Goods of the Land" at the NC Museum of History

Within "Living Together," a single-depth wall display that extends about twenty feet long delves into North Carolina's involvement in the naval stores industry. Although the introductory text to "Tar Nation" does not discuss dates of naval stores production except to mention the industry's decline by the Civil War,

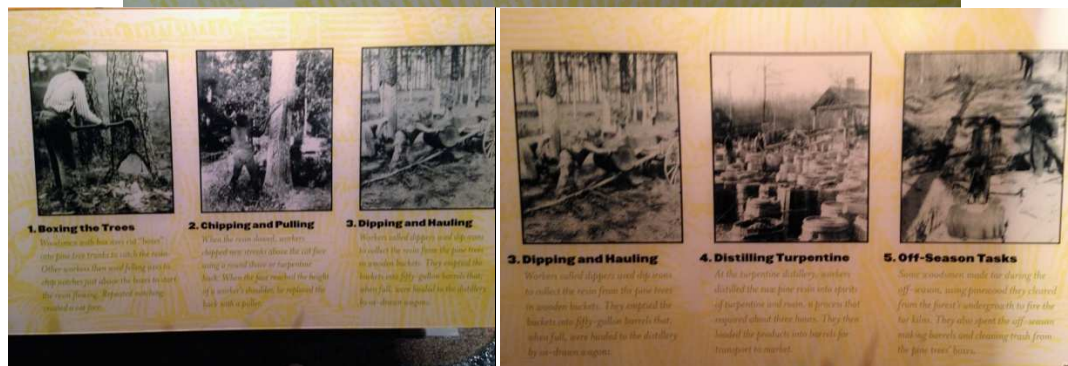
the display as a whole provides informative and aesthetically appealing inclusion of archaeological artifacts used to produce turpentine. The exhibit features a small assemblage of turpentine artifacts from the mid- to late-nineteenth century, including a dipper, a hack, two scrapers, and a puller. Utilizing interactive barrel lids to explain what uses existed for tar and turpentine, the exhibit provided visitors with a slightly hands-on way to learn about the products. The turpentine uses discussed in the text focused on its ability to thin paint, dissolve varnish, and act as an illuminant, but no reference is made to its invaluable role in the rubber industry beginning in the 1830s. Next to the barrels is a text display offering an explanation to the name Tar Heel. Here, the museum states that “[t]he name stuck most likely because of the state’s 150-year history as the world’s leading producer of naval stores – including tar” (North Carolina Museum of History 2011).



Figure 12: Naval Stores Display at the NC Museum of History



Figures 13 and 14 "Tar Nation" and Turpentine Tools at the NC Museum of History



Figures 15, 16 and 17: Turpentine Production Process at the NC Museum of History

It is curious for the viewer that this is the first mention of the true importance of naval stores to North Carolina's economy as both a colony and as a state. If North Carolina led the world in producing and exporting tar and turpentine, why is there no previous information in the exhibit to corroborate this fact? Why are 150 years of North Carolina's history condensed into a twenty-foot display? According to Neil and Philip Kotler (2000), museums are not capable of being "all things to all people," especially in a time when museums struggle to receive funding to support existing exhibits and staff. They argue that museums, as businesses, should "play to their strengths and are foolish to offer things of indifferent quality at which other competitors excel" (Kotler and Kotler 2000). Perhaps because local museums in Eastern North Carolina offer more extensive exhibits on naval stores, the North Carolina Museum of History may have decided that a detailed naval stores exhibit would not be as entertaining as the existing exhibit that focuses almost entirely on periods of unrest. *The Story of North Carolina* takes visitors from European-Native American conflicts to the American Revolution, the Civil War, World War I, World War II, and ends with Civil Rights Movement. Along the way, small displays of average family and work life are present, but it is clear that these are not the primary focus of the exhibit.

William Chapman (1985) discusses the appeal of the "exotic" in his evaluation of museums that follow an evolutionary organization, such as the Pitt Rivers Museum. Museum-goers look forward to exhibits that offer highly entertaining components (Jacknis 1985). For *The Story of North Carolina*, conflict, war, and piracy afford visitors with a place to experience a time quite



different from their own. The pirate display is designed to give visitors a sense of wonder, to stop them mid-stride as their attention is drawn to the unique and utterly different life led by Blackbeard and his fellow pirates (Greenblatt 1991; Karp 1991).

The focal point of this exhibit being on conflict between various peoples is not inherently a negative, and has certainly provided an educational and entertaining exhibit for the hundreds of thousands of yearly museum visitors. However, the North Carolina Museum of History, as the leading, state-funded museum, has a duty to its visitors to offer more than reinforcement of the state history instilled by the educational system. Not every museum can afford to produce an exhibit like *Mining the Museum* that challenges visitors to question all their preconceived assumptions, but visitors should not leave any exhibit in a state of blind acceptance (Corrin 1993). *The Story of North Carolina* does not provide visitors an outlet for their questions and skepticism, but instead promotes the accepted history of the state in order to show visitors the positive, progressive aspects of North Carolina's past (Duncan 1991). Duncan (1991) argues that museums, as places of authority hold a great deal of power in forming and controlling identity representations. Museums that represent the state of North Carolina and its people may desire to draw the audience's attention away from the state's horrible history of slavery and toward the aspects of history that shine a positive light on the state. The shift from eighteenth century traditional plantation agriculture, in the form of tobacco and cotton, to twentieth century equal rights is celebrated in the exhibit at the expense of a deeper

understanding of life on a turpentine plantation and what crucial role naval stores played in the state's history.

The North Carolina Museum of History not only provides visitors with conscious, thematic information in *The Story of North Carolina*, but also an unconscious or subconscious experience through the specific design of the exhibit and its features. Many modern exhibits have constructivist designs that afford visitors agency to decide for themselves how to explore and create meaning from the exhibit (Jeffery-Clay 1998). *The Story of North Carolina* has a systematic layout based on chronology that mostly instructs visitors what meanings and values to take away as opposed to allowing the museum-goers to actively participate in questioning the information presented and constructing their own individual meanings from it.

According to Ruth Phillips (2011), exhibits can create domains of inclusion and exclusion through their design. Although Phillips is specifically addressing the exclusion of particular peoples and cultures, I argue that the design can marginalize a particular time period or activity in addition to individuals. Not only is the location of the naval stores display with respect to the other displays in the exhibit important, the size also plays a role in the subconscious information passed to the visitors (Phillips 2011; Moser 2010). In a 20,000 square foot exhibit, roughly 20 square feet are set aside for the 150-year history of North Carolina being the lead exporter of naval stores (Waggoner 2011). One could argue that tar and turpentine harvesting and production should be the basis of the displays that focus on slavery, plantation life, economy, shipping and trade,

and industrial development. Indeed, naval stores were the first successful undertaking by the European settlers of North Carolina. Instead of being recognized and brought to the fore, this untraditional form of agriculture is hidden from the public. The exhibit design reinforces the important role that cotton and tobacco played in the formation and development of North Carolina, while minimizing that of naval stores. The museum instead could reform inaccurate assumptions of its visitors by designing an exhibit whose layout indicates relative importance of the history of naval stores in North Carolina (Moser 2010). Instead of using the text in the first two-thirds of the exhibit to reinforce the notion that tobacco and cotton were economically vital to the establishment of a well-functioning colony, and the later state, the exhibit text could alternatively highlight naval stores and their value to the developing North Carolina.

However, museums ultimately desire to increase the number of first time as well as repeat visitors, and it is likely that naval stores are thought of as dull aspects of the state's past that will not interest audiences. Here, naval stores show one of the primary tensions that exist between decision makers and curators. Board members may see entertainment and education as two sides of the same coin that cannot both be visible simultaneously. I argue that this is not true, and that creative curators can frame the complex history of naval stores in an entertaining manner. One way to do this is to utilize the state moniker, Tar Heel State, to delve into naval stores production. Another way is to discuss the mascot of one of the largest and most popular public universities in the state, the Carolina Tar Heels. Entertainment does not need to be sacrificed in order to

educate the public. In fact, if visitors are entertained throughout the exhibit, what they learn is more likely to stick with them after they leave.

The final flaw in the layout design of *The Story of North Carolina* is that the naval stores display is one that can be easily bypassed. The display is along a wall toward the back corner of section eight, "Living Together." An enticing, interactive transportation display forms the focal point in the center of the room. This display is directly in front of the visitors as they move into the room, and thus draws them in like a magnet. Once the visitors become engaged with the hands-on display, they have the choice to move around it to the left or right. If they move around to the right, they will miss most of the room and head toward the Civil War section, "North Carolina in Crisis." If the visitors move around the center display to the left, they again have another decision to make: to focus on the left wall, lined with text-oriented displays, or to remain attached to the transportation developments. Many children and adults would find it more interesting to remain engaged with how transportation improvements, such as railroads and roads, changed daily ways of life, and only offer passing glances to the smaller, flat, text-driven display of naval stores. The transportation display, with its lights and sounds, offers a multisensory experience with which the naval stores display cannot compete. These visitor-driven choices are not provided in every section of the exhibit – not through the early settlement, pirate, or American Revolution segments. The fact that the naval stores display can be missed, intentionally or not, by visitors sends a subconscious message to museum goers that this

display is not as critical as others, that this part of North Carolina's heritage is often overlooked and that is okay.

North Carolina offers more than the state-funded, multi-million dollar Museum of History in Raleigh. In fact, there are many local, regional, and private museums across the state that present specific topics or time periods of historical importance to North Carolina. The regional Cape Fear Museum of History and Science, henceforth the Cape Fear Museum, offers insight into the regional history of New Hanover County, North Carolina and its neighbors. The Cape Fear Museum aspires to “collect[], preserve[] and interpret[] objects relating to the history, science, and cultures of the Lower Cape Fear [...and] make[] those objects and their interpretation available to the public” (Cape Fear Museum n.d.). The Cape Fear Museum consists of a large two-story structure that houses three permanent exhibits, up to three changing exhibits, two indoor activity rooms, and an outdoor green space.

The permanent history exhibit is titled *Cape Fear Stories* and combines text and artifacts to lead visitors through the region's history. From the very first introduction panel, the exhibit tells of the importance of the longleaf pine forests to the livelihoods of North Carolinians.

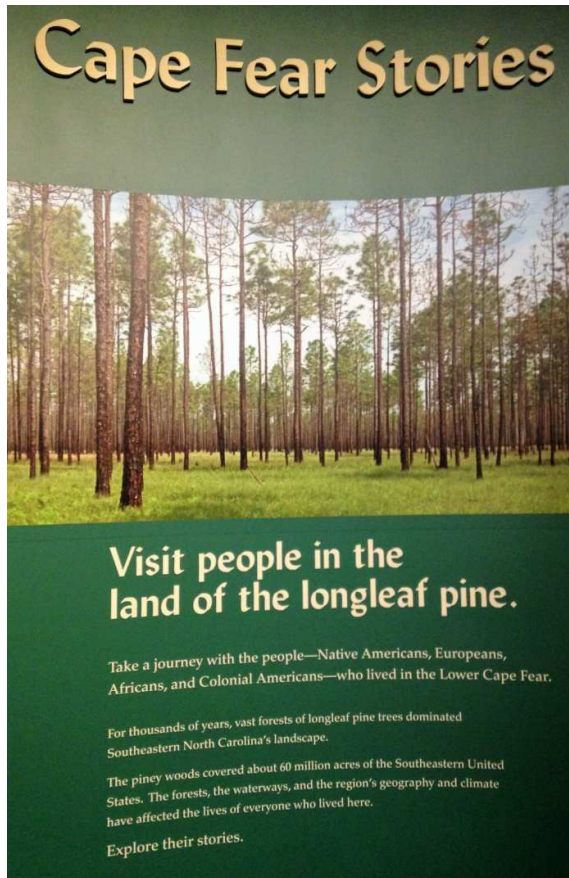
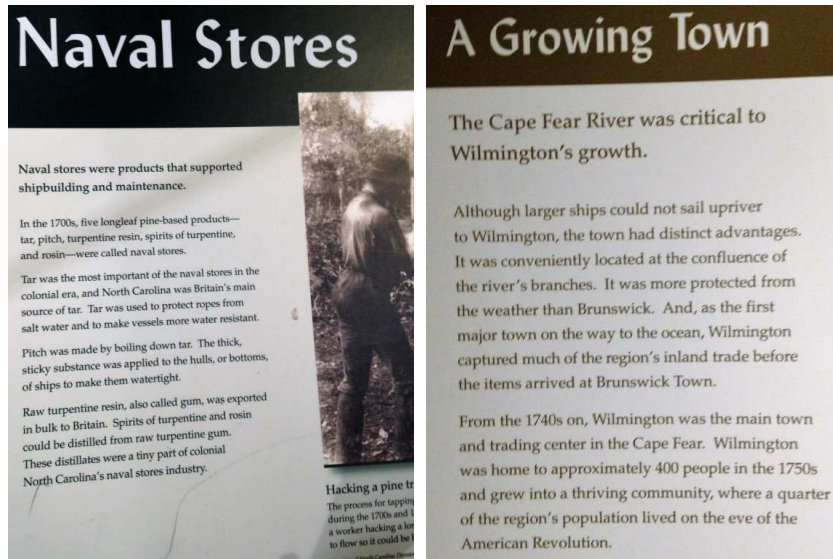


Figure 18: Introductory Panel at the Cape Fear Museum

Once through the prehistory of the Cape Fear region, the exhibit focuses on how European settlers took advantage of the pine forests to turn a profit. The longleaf pine forests are presented as the base for discussions on North Carolina's economic development and social values. Visitors who journey through *Cape Fear Stories* do not need any background knowledge of naval stores, or of North Carolina's history to enjoy the simple, informative text that accompanies both archaeological finds and interactive components.



Figures 19 and 20: Naval Stores and Wilmington Texts at the Cape Fear Museum



Figure 21: Turpentine Tools at the Cape Fear Museum

Roughly half of the exhibit focuses on the pre-Revolutionary period of North Carolina's history. After a thorough explanation of how longleaf pines are fire-resistant, and therefore were the predominant tree species in the early days of colonization, the exhibit displays archaeological artifacts of all the tools used throughout the tar and turpentine production processes, with brief yet satisfying descriptions. A replica tar kiln accompanies the textual information that discusses the strenuous effort required by slaves and poor whites to produce naval stores

for the elite class. This social theme prevails throughout the exhibit, especially with regards to North Carolina's economy. Following the tar kiln, "Exploiting the Forest" emphasizes the role of naval stores in the Cape Fear region, including uses for and trade of the products.

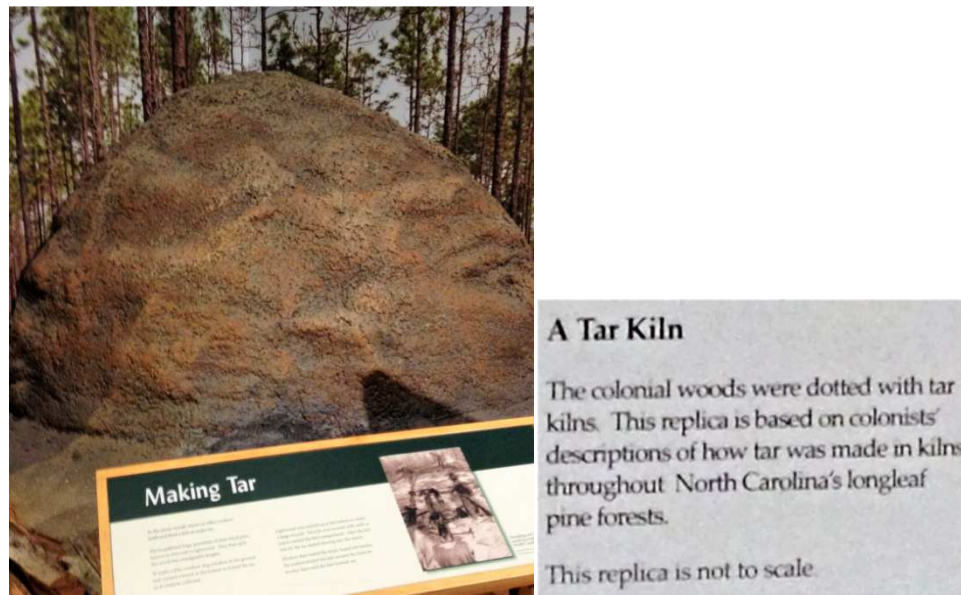


Figure 22: Tar Kiln Representation at the Cape Fear Museum

The Cape Fear Museum seems to be taking advice from Kenneth Hudson (1991). Hudson argues that museums will offer more realistic exhibits if they include multi-sensory components instead of leaving all non-sight senses to the visitors' imaginations (Hudson 1991). *Cape Fear Stories* provides interactive elements to engage visitors' sense of touch as well as sight. A mini barrel of "tar" with a handle protruding from the top allows visitors to stir the liquid to feel the consistency of tar and better understand the challenges that could arise from trying to transport and use such a viscous substance.





Accompanying Text:  
Raise this handle.  
Sailors used tar to  
waterproof a ship's  
rope and deck.  
Imagine coating a  
ship's rigging with  
this substance.

Figure 23: Interactive Tar Experience at the Cape Fear Museum

As the exhibit progresses into the nineteenth century, the importance of naval stores, especially turpentine after the 1830s, is not lost in the discussions of improved transportation methods and other agricultural products being grown and shipped to both domestic and overseas markets. The exhibit not only focuses on the economic and social aspects of naval stores production, but it also incorporates turpentine distilling into the industrial improvements display. This display shows a miniaturized replica of what a turpentine distillery would have looked like during the mid-1800s, while a scented box that smells of turpentine is available for visitors to use their sense of smell to transport them back in time (Hudson 1991). It also includes documentation for the volume of tar, turpentine, and their byproducts exported from Wilmington, North Carolina. *Cape Fear Stories* provides visitors to the Cape Fear Museum with an entertaining, multi-sensory experience that encompasses an often-overlooked element of the state's history.



Figure 24: Model Turpentine Distillery at the Cape Fear Museum

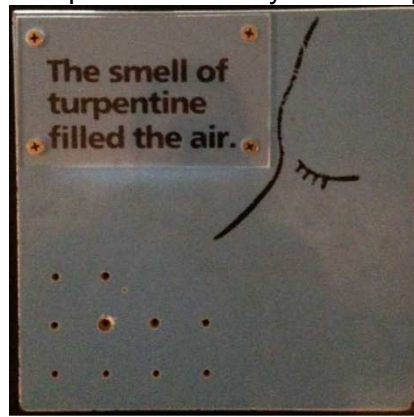


Figure 25: Interactive Scent Display at the Cape Fear Museum

In addition to state and local museums, North Carolina has three state-funded maritime museums, in Hatteras, Beaufort, and Southport. Each one focuses on a different aspect of the maritime history of North Carolina, with Southport being the only one that addresses the role of naval stores in the state's shipping industry. The Maritime Museum at Southport is a single-story structure that houses one permanent exhibit, which visitors may explore at their own pace. The Maritime Museum at Southport devotes its permanent exhibit to the history of the lower Cape Fear River, especially during the time of the Civil War. However, the museum does provide a brief introduction to the region prior to

1860. Organized chronologically, like most history museums, the Southport Maritime Museum offers visitors an introduction to the ways in which archaeology assists our understanding of the past. With that background information provided, visitors move on to learn about Brunswick Town, North Carolina's principal port in the early 1700s, "the primary exports [of which] were naval stores" (NC Maritime Museums, Southport 2016).



Figure 26: Naval Stores Display at the Maritime Museum at Southport

The exhibit provides visitors with multi-sensory components, including a flip book and scent center where visitors can smell the difference between tar and turpentine in various stages of production (Hudson 1991).



Figure 27: Scent Center at the Maritime Museum at Southport

The exhibit also utilizes new technology to entice visitors to further examine the naval stores industry since the space is too small to have additional displays on the topic. The interactive, touch-screen computer allows visitors to learn about the role of slaves, women, and children in the naval stores, coopering, and blacksmithing industries. While the wall displays are intentionally simple, the naval stores component of touch-screen monitor provides the missing details to fill in the knowledge gaps.

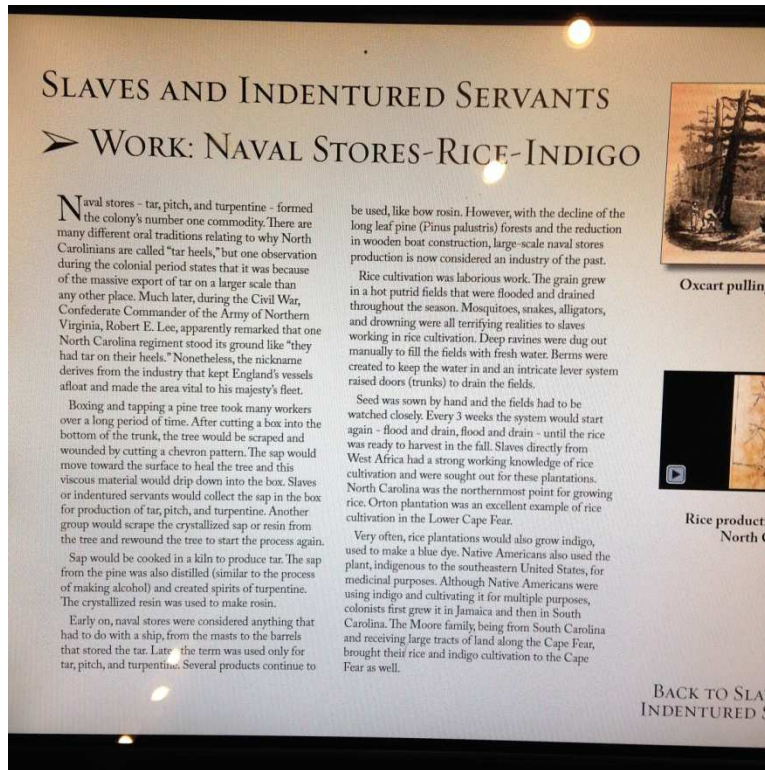


Figure 28: Touch-Screen Computer at the Maritime Museum at Southport

Even though the North Carolina Museum of History and the Maritime Museum at Southport are funded by the same state government programs, a significant portion of the funds have clearly gone to the Museum of History in the state's capital city. Perhaps the state's Department of Natural and Cultural Resources feels they must divide what would be funding for a single maritime museum between the three locations as if they were one.

## CHAPTER 4. DISCUSSION

The North Carolina Museum of History, the Cape Fear Museum, and the Maritime Museum at Southport provide audiences with engaging exhibits on the state's history. However, with respect to the representation of naval stores, the Cape Fear Museum has the most comprehensive displays that encompass natural and human phenomena that led to the prevalence of longleaf pine trees, as well as detailed explanations of tar and turpentine production, distilling, and trade. Using simple explanatory text along with interactive scent, touch, and sight components, the Cape Fear Museum's exhibit, *Cape Fear Stories*, is accessible to a wide range of visitors.

Although an engaging exhibit overall, the North Carolina Museum of History provides the least representation of naval stores in *The Story of North Carolina*. With minimal display space devoted to the topic, the exhibit seems to promote the importance of tobacco and cotton over naval stores in the state's history. Being one of the most visited history museums in North Carolina, its duty to preserve the state's heritage and to educate the audience does not appear to apply to the representation of naval stores within the exhibit.

The naval stores display at the Maritime Museum at Southport is similar in size to that of the North Carolina Museum of History. However, the Maritime Museum at Southport offers a significantly smaller exhibit, so naval stores make up a larger proportion of the total space. Offerings that include interactive technology and multi-sensory displays make this exhibit an engaging experience for audiences of all ages.

Why is it of such vital importance that the North Carolina Museum of History challenge the accepted history of the state and present new information to its visitors as that information is uncovered through textual and archaeological discoveries? This museum stands in the heart of the state's capital, and *The Story of North Carolina* is a \$9.3 million exhibit that specifically aims to collect, preserve, and present the heritage of North Carolina (North Carolina Museum of History 2016b; Waggoner 2011). The exhibit attempts to provide an engaging, albeit condensed, experience about the history of the entire state, not a particular region or locality. However, in doing so, the exhibit lost sight of a crucial component of the state's history: how naval stores production and trade put North Carolina on the map, figuratively speaking.

The North Carolina Museum of History has not visibly expressed concern with correcting the majority's impressions of the early history of the state. Although eighteenth century settlers attempted to plant tobacco, the crop did not take in the infertile, sandy soils. Approaching North Carolina's history with naval stores from this perspective would have provided visitors with some familiar information followed by new information that is frequently ignored when presenting the state's history. For example, the social studies public education standards for the state of North Carolina allow for inclusion of naval stores discussions in both the fourth and eighth grades (NC Department of Public Instruction 2013a; NC Department of Public Instruction 2013b). In 2010, North Carolina adopted the nation-wide education standards known as Common Core. Since Common Core is a national education program, its goals focus on teaching

students how to think and interpret information on a given subject in a critical manner (*Common Core State Standards Initiative* 2010). Therefore, the North Carolina Department of Public Instruction offers educators subject-specific teaching guides.

According to the State Board of Education, “Fourth Grade is the first formal introduction to North Carolina, its ethnic diversity, its rich culture, the economic energy of its people, and its geographic regions” (Public Schools of North Carolina 2010b). In addition to the general history, culture, and economy of North Carolina, fourth grade students will “explore North Carolina’s economy by examining how natural resources have influenced economic development in our state” (Public Schools of North Carolina 2010b). As seen above, the opportunity to educate students on the crucial role naval stores played in the state’s history is included in the fourth and eighth grade standard educational goals. However, the detailed breakdown of the standards demonstrates a focus on tobacco and cotton while glossing over naval stores.

The “Instructional Support Tools” for Fourth Grade social studies offers examples and links for the different topic-based sections that should be covered during the school year to meet the Common Core requirements (NC Department of Public Instruction 2013b). For example, section 4.H.1.3 states that students must be able to “[e]xplain how people, events and developments brought about changes to communities in various regions of N.C.” (NC Department of Public Instruction 2013b). One way to fulfill this history requirement is to ensure that students understand both the role of slaves in plantation life and the role of



infrastructural improvements in the social, political, and economic development of North Carolina communities (NC Department of Public Instruction 2013b). Similarly, the geography section, 4.G.1.2, encourages Fourth Grade students to be familiar with the human-nature relationship and how people impacted the environment and used it to their advantage (NC Department of Public Instruction 2013b). However neither section mentions naval stores specifically. In fact, the geography section offers links to contemporary issues the state faces with urbanization, pollution, and climate change, but no link to historical information on the destruction of the longleaf pine forests of North Carolina due to 150 years of resource harvesting.

Although the *Essential Standards: Fourth Grade Social Studies: Unpacked Content* document does not list every detail that teachers must teach, nor does it specify topics that should be ignored, the document provides the majority of teachers across the state with guidelines for topics and facts that must be covered as part of the Fourth Grade social studies curriculum (NC Department of Public Instruction 2013b). There is one lone mention of turpentine in a link to examples of North Carolina industries under section 4.E.1.3. The link lists turpentine under agriculture along with tobacco, cotton, and rice, but offers no additional information on the subject like it does for the other products (NC Department of Public Instruction 2013b; CommunicationSolutions/ISI 2006).

The Eighth Grade standards for public education in North Carolina expand on the Fourth Grade curriculum, and encourage thorough understanding of significant events, people, and ideas in North Carolina's past and their relation to

the United States and the world (Public Schools of North Carolina 2010a). Section 8.G.1.2 makes certain that Eight Grade students understand “how human and environmental interaction affected quality of life and settlement patterns in North Carolina and the United States” (NC Department of Public Instruction 2013a). This section opens the door for teaching students the value of naval stores production with respect to the state’s history and heritage. However, the requirement stresses that teachers focus on “environmental disasters, infrastructure development, coastal restoration and alternative sources of energy” (NC Department of Public Instruction 2013a).

The essential standards that are published by the Department of Public Instruction (2013a) provide the basis for what will be on the state-wide, end-of-course examinations. Teachers strive to educate their students beyond the base level expectations, but their jobs often depend on increasing the number of students who pass the course exams. Whether or not this is the best way to ensure students receive the most beneficial education is not the purpose of this paper. However, if instructors are teaching based on the state-wide tests, then they are not likely to diverge much from what is listed in the breakdown of expectations. Therefore, it is absolutely critical that museums provide supplemental information that students may not have learned in their formal public education settings.

History museums, whose primary focus is the preservation and education of the history and heritage of North Carolina, should aim to supplement the state’s educational standards, not simply reiterate them to the students, current

or former, who visit. Regardless of the source of funding of the museum, this should be a priority. This does not mean that museums should read like stale history textbooks, nor does it mean that every history museum should present the same information, for neither of these solutions would attract visitors, first time or repeat, youth or adult. Instead, the museums should offer exhibits that present the historical information in a uniquely engaging and hands-on manner. Not all aspects of North Carolina's history are pirates and battles. Instead of highlighting the already "glamorous" events and people, museums must find new ways to make the everyday history equally as glamorous and intriguing. This is where curators and board members can work together to satisfy the educational mission of the museum through entertainment. The North Carolina Museum of History, being the state's most visited history museum, should be at the forefront of this movement. Its main exhibit, *The Story of North Carolina*, should be a place where visitors can discuss new themes and ideas that are made known through continuous study of historical documents and archaeological research. The exhibit should present completed and in-progress archaeological excavations throughout North Carolina, and let visitors become part of the discussion on the interpretations. This will allow visitors to feel connected to the state's past so that they feel inclined to continue preservation of North Carolina's heritage and history through archaeology and document-based research.

Unlike the North Carolina Museum of History, the Cape Fear Museum uses archaeological research as its basis at the beginning of the main exhibit, *Cape Fear Stories*. But even the Cape Fear Museum, which includes a

wonderfully detailed section on naval stores, does not provide visitors with a link between the archaeological research being done and the history of naval stores. Understanding that most of the artifacts used in tar and turpentine production are wood-based and therefore would not leave identifiable, if even visible, remains in the ground would allow visitors to probe and question how history is recorded and interpreted. Wood handles of the tools used for tapping pine trees and collecting turpentine would have long since rotted, and the iron axe heads may be misinterpreted as lumber-related axe heads. Similarly, the only indication of the presence of a tar kiln would be soil discoloration and possibly some burnt clay from the kiln floor. The biggest identifier of the turpentine industry would be the remains of the iron or copper stills used for producing rosin and spirits of turpentine. Remains of stills are most likely to be found in coastal towns near the water, and would not necessarily provide archaeologists with information on where the turpentine was collected or its method(s) of transportation to the distillery. Although this type of information does not provide a complete picture of the history of naval stores in North Carolina, it is vital to share it with museum visitors so they become participants in their own museum-going experience as opposed to intake receptacles.

Naval stores are critical to North Carolina's past and should be highlighted as such in exhibits about the state's history and heritage. The Cape Fear Museum and Maritime Museum at Southport both devote an acceptable proportion of their exhibit to naval stores and their role in North Carolina's history. However, quality of information and display methods are ultimately more

important than quantity. No exhibit will ever be perfect simply due to museum sizes and budgets as well as the diversity of visitors, but no museum should ever stop trying to update and improve their exhibits with new archaeological and documentary evidence.

## CHAPTER 5. CONCLUSION

I initially set out to analyze the representation of naval stores in history museums in North Carolina. Playing such a significant role for over 150 years, I expected naval stores to be displayed in a manner that reflected their importance. In only one of three museums analyzed here did I find a highly accurate and detailed exhibit highlighting the true value of naval stores to North Carolina. The Cape Fear Museum, a regional museum in Wilmington, NC, provides audiences with a thorough understanding of the role of naval stores in the social and economic development of the state. The Maritime Museum at Southport ultimately focuses on maritime trade and shipbuilding and naval battles of the Civil War. The brief inclusion of naval stores, although well-designed, does not fit well within the timeframe of the Civil War, and is therefore not the focal point of the exhibit. Meanwhile, the ever-popular NC Museum of History seems to hide, both figuratively and literally, the involvement of naval stores. Perhaps, historians see tobacco, cotton, and the plantation structure associated with them to be a more provocative, accessible, or gratifying study. Instead of branching into an element of history that is less well-known, there may be comfort in continuing where others have left off. Naval stores, as a form of untraditional agriculture, are an example of the messy cultural and economic history of North Carolina. Unfortunately, this cyclical pattern in research results in vital aspects of the state's history being hidden in the shadows. But, museums offer the perfect venue for explaining this complex history through a series of entertaining displays and interactive components.

Topics that play a major role in the development of North Carolina cannot be ignored by professional educators or museum exhibits simply because they are not the glamorous or action-packed aspects of the state's history. The history of naval stores offers a unique platform on which museums can build their exhibits of key elements of North Carolina's historical, economic, and social development. This type of exhibit would encourage visitors to question their formal education by asking why emphasis is placed on certain aspects of history and not others.

Continued research on naval stores is equally as important as presenting their history in museum settings. In particular, future archaeological research in North Carolina should seek to identify specific signs of naval stores production. Archaeologists are key contributors to the creation of a more complete understanding of early American life. Of the many excavations that have and are occurring on North Carolina's historic plantations, priority is given to unearthing structures and tools related to planter and slave households. Although these types of sites provide information vital to understanding the social dynamics of the past, they can also tell economic stories. Archaeological artifacts related to naval stores production may be few and far between, but that doesn't mean that reports should ignore or gloss over this industry in their interpretations since they also reveal critical aspects of both social dynamics and economic development of the state. If researchers draw attention to naval stores, museums and schools will spend more time and effort to educate the public about North Carolina's extensive history of producing and exporting tar, turpentine, and their derivatives.

As museums continue to expand and improve their exhibits on the history of North Carolina, it is of critical importance that the role of naval stores is highlighted. In a world that appears to value money more than truth, museums are a sacred place where visitors expect and deserve truth, even if it contradicts widely accepted beliefs. Museums should offer an environment for discussing and questioning new research and discoveries. New archaeological and documentary finds related to naval stores production provide North Carolina's history museums with additional data necessary to stay relevant in this business-oriented world.



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