THE MCDAVID BOAT

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ABSTRACT

THE MCDAVID BOAT

Robert George Rutledge

In 2011, local people pulled a wrecked, drifting boat from the Escambia River near the village of McDavid in northwestern Florida. Over the following two years, the vessel was examined by teams of archaeologists from the University of West Florida in Pensacola, Florida. Unlike traditional shipwrecks, this small boat had no identifying elements and was completely without a related site, artifacts, cargo, or remaining physical elements that could help answer the researchers’ questions about its origin and purpose. Sonar and magnetometer surveys were inconclusive, and none of the missing hull pieces, power-plant elements, or steering gear components were found. Thus, analysis of the vessel has been developed through a discussion of maritime power system knowledge, the origins of propeller systems, the availability of steam and internal-combustion essentials in the region, and likely origins of the lumber and nails used to build the craft.
CHAPTER I
INTRODUCTION

In early June 2011, Mr. L. B. Malone, a long-time resident of McDavid, Florida, found the remains of a small vessel in the Escambia River (Figure 1). After Mark and Cindy Greenwell towed the derelict ashore, Mr. Malone asked them to help salvage the boat for possible historic value to the McDavid community. At that time, the Greenwells contacted Dr. Della Scott-Ireton, Maritime Archaeologist at the Florida Public Archaeology Network center in Pensacola, Florida. Under Dr. Scott-Ireton’s recommendation, the Greenwells returned the boat to the water to protect it from the damage that would have resulted from the craft’s remaining ashore and being allowed to air dry. Photographs are contained in Appendix A.

Following this initial effort to protect the vessel, Dr. Scott-Ireton contacted the Department of Anthropology at the University of West Florida (UWF) to seek assistance from the university’s maritime archaeologists. In mid-June, a team led by Dr. John Bratten and Dr. Greg Cook traveled to McDavid with several UWF graduate students and student members of the 2011 UWF field school to conduct an examination and survey of the vessel. Led to the site by the Greenwells, the group members carefully slid the vessel along the river bottom until it could be partially exposed on a sand bar. The team established an elevated center-line tape and took measurements along the vessel’s length at significant structural points. Team members made notes and drawings of the craft, recorded the measurements, and captured numerous photographs of the vessel (Appendix B). Once the team completed the survey, the vessel was submerged in a shallow slough in an effort to prevent further damage.
FIGURE 1. Escambia County, Florida, map with McDavid in the upper center. (Courtesy of Merritt 2007.)
This thesis reconstructs the physical aspects of the vessel that can be determined by its remaining components. The thesis describes the history of individual structural components and provides examples of similar vessels, focusing on a time period when the boat may have been built. Local museums and archives provided narratives of the communities, populations, and industries of the Conecuh-Escambia watershed area. Such writings illustrate the river’s essential connection to the history of the region, offering suggestions of the origin of the boat and its purpose.

The McDavid boat presents a mixed message because uniform features such as in the evenness of the main frames indicate that boat builders followed a pattern in construction. At the same time, other elements, such as the huge wooden block that housed the propeller shaft, have a vernacular flavor. The builder may have used whatever item was handy rather than using something more modern and efficient. The mechanical components help date the vessel to the end of the 19th century or the beginning of the 20th century, a time when commercial, agricultural, and industrial development flourished in the Florida panhandle.
CHAPTER II
HISTORY

As Columbus explored the New World in 1492, he met people who used hollowed-out logs as small boats. His diaries show that his crewmen marveled at the efficiency and speed of these craft and noted that some of them were large enough to carry up to 40 people (Hartman 1996:5). Columbus gave Europeans a brief glimpse of their own ancient history, a history that had been evolving for hundreds of centuries but was no longer remembered (Gies and Gies 1995:286).

At that moment in time as the two groups of vessels came face-to-face, a remarkable juxtaposition of cultures and technologies took place. The native Caribbean people and the seafaring Europeans represented vastly different cultures that had no knowledge of one another. Columbus’s ships were the most technically advanced man-made machines of the time, while the dugout canoe was a vessel that mirrored mankind’s most primitive watercraft. The two were truly worlds apart, but they came from the same creative spark that compelled their ancestors to find ways to cross bodies of water.

Europeans and native peoples continued to interact and blend their cultures for the following centuries, eventually learning boat-building technologies that served the needs of northwestern Florida’s people and suited the area’s riverine landscape. Common along the riverbanks, Spanish land grants were easily accessed by boat. More remote areas of the rivers were accessible only by small boats. Settlement patterns along the Escambia-Conecuh River were keyed to pioneers using small boats and following the river systems. Native American trails on both sides of the river allowed some overland access to favorable sites that often developed into fords and villages and later into communities. Trails funneled commodities into coastal communities like Pensacola. Similar patterns of exploration and settlement followed parallel courses in all of the surrounding river and bay systems.
Older maps do not indicate as many settlements on the Santa Rosa side of the river valley, but commonly used sites have served Indian populations for many generations. The Chumuckla-Mineral Springs site is said to have been an early 1400s Native American settlement (Smith 2007:i). Upriver, the small community of Brooklyn, Alabama, became a pioneer farming settlement about 1818 but was known as a Native American settlement area as recently as 1806. In 1818 and 1819, a caravan of approximately 300 families traveled overland from the Carolinas to take up homesteads across southern Alabama. These pioneers sought jobs in the burgeoning timber industry in the region (Escambia County Historical Society 1978b:18). Brooklyn, Alabama, situated at the confluence of the Sepulga and Pigeon rivers (major tributaries of the Escambia-Conecuh system) provided area farmers a river landing site and annually warehoused 3,000 to 10,000 bales of cotton for shipment to Pensacola (McMillan 1949:1). By the early 1800s, the Escambia-Conecuh River system had become the “commercial outlet of the entire region” (River Travel and Commerce [1950]:i).

By 1821, approximately 17 keelboats and flatboats transported produce down the river system to markets in Pensacola (Cole [1910]). The use of larger steamboats was attempted, but the 1845 sinking of the Shaw and the ensuing financial losses to Brooklyn area citizens effectively disrupted steamboat development in the upper watershed areas. Shippers returned to using the keelboats and flatboats to meet their needs. Keelboats were 60 to 70 feet long, 10 feet wide, and able to carry loads of 50 to 60 bales of cotton, each weighing 300 to 500 pounds (Riley 1881:i). Keelboats could also operate in shallow waters (River Travel and Commerce [1950]:2). As the Shaw experience had shown, the large steamers could not navigate the upland waterways.

Riverside communities such as Brevards, Shades, Coopers, Pine Barren, Milners, Fort Crawford, Nathansville, Filmore, and Sparta appear in an 1865 map (Figure 2) but have since disappeared or have been renamed. Many other settlements, however, have thrived because of their proximity to good river landing sites. Their location and topography supported the construction of mills and eventual connections with railroads and highway systems. Flomaton was incorporated in 1869, Bluff Springs in 1888, Pollard in 1893, and Century (originally named
“Tea Spoon”) began in 1900 with the founding of the Alger-Sullivan lumber mill. Jay was incorporated in 1902 (Wentworth 1940:1). Canoe, near Atmore, began in 1852 (Flomaton Railroad Museum and Historical Center 2008:ii), while Atmore began as a stage stop around 1870 (Escambia County Historical Society 1991:16). The Brewton family, from whom the Alabama city and major population center got its name, came to the area in 1839 (Escambia County Historical Society 1971:4).

FIGURE 2. 1865 map of the Conecuh-Escambia River valley. (Courtesy of Pace Library History Center 1865.)

Once the region’s period of European colonization ended and political control passed to the United States, communities began to thrive all along the Escambia-Conecuh River valley. As is evident on the 1865 map of the region, these communities were well established by the late 1800s, and those situated along the rivers shared a common heritage of development through utilization of the waterways for their transportation needs.

The importance of the river system to pioneer families is illustrated by the variety of commodities that were transported by water, including corn, flour, sugar, salt, coffee, molasses, whiskey, and iron (Riley 1881:i). In 1840, approximately 200 deer hides were shipped to
Pensacola from the Brooklyn, Alabama, area (McCreary [1930]). The deer hide trade had continued from early colonial days, when Creek Indians often brought pack trains of 150 ponies to Pensacola from as far away as today’s Montgomery, Alabama. Following the “paths” shown on the early maps, native traders carried furs, honey, bear oil, bees wax, snake root, hickory nut oil, pine tar, and numbers of medicinal plants to sell to agents of the Panton and Leslie Company trading post on Pensacola Bay. These riverside trails remained barely passable into the 1820s, when General Jackson brought troops into the area (McCreary [1930]).

Trading and commerce along the eastern side of the river valley was conducted along an ancient pathway named the “Old Indian Trading Trail.” It paralleled the river, passing near the present-day communities of Jay and Chumuckla, and ended near Pace in what had once been the ferry-landing community of Floridatown. These east-side trails also carried several local names. The “Wolf Trail” was a well recognized native path in the area, while the “Three-Notch Road” was a pioneers’ pathway (Smith 2007:96).

Throughout the 1700s and 1800s and into the 1900s, these riverside routes, in tandem with the efforts of keelboats, flatboats, canoes, and the occasional steamer, provided the principal connections to the Pensacola markets from the inland communities and remote homesteads. Such reliance on river-borne commerce was an essential key to the early growth of Florida, which did not have cross-state railroads until the late 1800s (Bass 2008:1). Rivers have been described as “vital arteries of transportation, permitting explorers to penetrate deep into uncharted territory” (Dunnavent 2003:xvii) and as features that “launch a quest for freedom” (Bloom 1986:12). River traffic was eventually overtaken by highways and railroads.

Settlement grew after the acceptance of Florida into the Union, with pioneers coming overland from Alabama, Georgia, and the Carolinas. Logging created an abundance of jobs and encouraged settlement during the 1820s and 1830s. There was a steady demand for hewn timbers for railroad construction, round logs to fuel sawmills, squared timbers loaded for transportation to foreign mills, and an almost unquenchable demand for extra long and straight timbers for masts and spars to supply shipbuilding industries here and abroad (Smith 2007:95).
The records of early Spanish explorations of the Pensacola area, as well as those remaining from French and English occupations, depict the area as rich in timber. By the mid-1700s, Pensacola’s timber products were being marketed on a world-wide basis, and four water-powered sawmills operated in the area by 1766 (Moore 2002:i). Lumber production in the colonial period also served the domestic needs of the slowly growing region. Building materials were sold directly from numerous local mills scattered along the Escambia-Conecuh watershed. Hickory and oak came from the south Atlantic colonies, and longleaf pine and naval stores were harvested from the southern regions. These products continued to supply both local and foreign markets (Kohlmeyer 1983:86). Markets fluctuated greatly, however, rising and falling along with national financial prospects. The Pensacola Gazette reported that in 1823, just one mill was operating within 50 miles of Pensacola (Eisterhold 1973:267), yet the next decade saw 25 mills operating in the area. Production increased in the early 1830s, when steam power replaced many water-powered mills. Sawing was more accurate and diminished waste. Wood could be more easily cleaned, dried, and loaded onto ocean-going ships. Consequently, the efficiency, profitability, and longevity of the region’s timber industry were enhanced (Eisterhold 1973:268).

A 1960 list (Appendix C) includes a total of 43 mills that had operated in the region but have since closed. Of that number, 18 were situated in the Escambia-Conecuh River valley (McMillan 1963a:ii). The majority of early sawmills relied on area rivers for the movement of their timber, and many local mills used small boats in their operations. Other local mills include the Bay Point Mill, the Bagdad Land and Lumber Company, the Simpson Mill, and the J. R. Mims Mill, all of which were in the present-day Milton area. Pensacola’s Skinner Lumber Company is listed, as is the Jacobi Mill in Molino, the Sanford and Wallace Mill in Wallace, the Pollard Mill Company, and the Lindsay Lumber Company. The E. Walker Mill in Flomaton, the Harold Mill, the Lovelace Mill, the Peters Mill, and dozens more illustrate the breadth of the lumbering industry throughout northwest Florida and south-central Alabama (McMillan 1963a:ii).
A similar list of old mills compiled in 1891 (Appendix D) is contained in the McMillan Trust Archives; the list was originally published in the *Birmingham Age-Herald* and was reprinted in the *Pine Belt News* (1911). All 15 of these mills, water-wheel powered for the most part, were situated along the upper stretches of the Escambia-Conecuh River. Mills along the Patsaliga, the Burnt Corn, Murder Creek, the Little Escambia, and the Sepulga all exploited the vast stands of longleaf yellow pine in their respective regions. For generations, the bulk of this timber was rafted downstream to Pensacola (Waters 1983:ii). The 15 mills on the 1891 list are Alabama mills located along the tributaries of the Escambia-Conecuh River system. The presence of so many sawmills throughout the river valley and their continued operation from the mid 1700s to the present make it clear that the pine boards used to build the McDavid boat were products of these local sawmills.

Moving southward along the river system, pioneers found many appropriate locations for the construction and operation of water mills. On the Santa Rosa County side of the river, communities like Jay, Chumuckla, and Mineral Springs evolved along with the mills that provided needed services and employed the townspeople of these riverside villages and towns: Johnson’s Mill on Moore’s Creek, the Centennial Mill owned by the McDavids, the Diamond Mill operated by John T. Diamond, the Cobb Mill, the McCaskill Mill, the Holley-Riley Mill, the Gaylor Old Mill, the Barrow Mill, and the Bray Mill.

In 1996, Mr. John Phillips of the Archaeology Institute at the University of West Florida conducted an extensive field survey of the northwest counties of Florida. The survey identified, surveyed, and recorded 57 historic mill sites in the region (Phillips 1996:114). Of this group, 11 sites were found to have been prehistoric Native American sites, and the rest were distributed throughout the colonial and Early American periods. One mill site came from the British period; another came from the second Spanish period; 18 were early American mill sites; and 21 dated from the late 1800s through the early 1900s. By this time, builders converted many local mills to steam power, although several mills continued to use the water wheel until the end of the Great Depression in the 1930s.
Although there are a few of these mills scattered over the counties, many operated along the upper Escambia River in the area where the McDavid boat was found. Those sites include Molino, the Jacobi Mill, the McMillan Mill in Pine Barren, the Milner Mill in McDavid (Figure 3), Stanton’s Mill in Bluff Springs, Martin’s Mill in Century, and the mill at Bogia (Phillips 1996:114). Within this group, 15 to 20 of the archaeological sites represent mill sites that border on or are in the very near vicinity of the site of the McDavid boat (Smith 2007:101). These data are summarized in Appendix E.

FIGURE 3. Milner’s 1880s sawmill in McDavid, Florida. (Courtesy of Collier and Fischer 1993.)

The McDavid vessel was discovered in an area that has been blanketed with sawmills since the mid-1700s, with many more mills built and operated under both British and American jurisdictions throughout the 1800s and early 1900s. A number of these timber enterprises continue today, represented by large corporations such as the T. R. Miller Lumber Company of Brewton, Alabama. Thus, it is quite possible that the wood used in the vessel came from a local sawmill and that the boat was used in the timber operations of one of these mills.
In addition to providing an avenue for the shipment of timber products, the Escambia-Conecuh River system has also facilitated the transport of many other materials throughout history. For example, keelboats, flatboats, and barges carried supplies of cow hides, beef, pork, poultry, bacon, hams, venison, corn, other vegetables, cedar, pine, and cypress logs, finished lumber, and tobacco (Brose 1991:102; Rucker 1990:i). The 1820 census indicates that settlers were raising the above-mentioned farm products for the Pensacola markets, as well as rice and cotton. Throughout the 1700s and the early 1800s, dugouts, rafts, flatboats, and keelboats would have been necessary to carry on this trade. Overland trails were either non-existent or “cumbersome and often muddy at best” (Rucker 1990:51). Trade goods produced along the Yellow River were brought to Pensacola by a barge service beginning in 1828 (Rucker 1990:140), while the importance of the area’s rivers to the commercial viability of the region is evidenced by an 1830 petition to Congress for funds to provide for a snag-boat/dredge to help clear the Escambia-Conecuh channel of hazardous debris (Rucker 1990:156). In 1897, the state legislature appropriated $12,000 to pay for snag-boat dredging in the region (Waters 1983:i).

Cotton production became common in the region by the early 1800s. The 1822-1824 production of cotton in southern Alabama was 46,000 bales, and 10 years later, that figure had risen to 195,000 bales (Brose 1991:104). Cotton production along the watershed varied from several thousand bales up to 10,000 bales per year (Waters 1983:ii), and much of it was shipped down the river system. Weevil infestations in the early 1900s caused cotton crop losses of as much as 30% to 40%, forcing area farmers to switch to crops such as peanuts, corn, and soybeans. For a period, small farmers could produce and market blueberries, earning up to $1,280 per acre (Northwest Florida Daily News 1998:C1).

The operators of Naval stores shipped their products down the region’s river systems. The term Naval stores refers to products distilled from the sap of pine trees. Pine-pitch or pine-tar products are thought to have been in use for more than 8,000 years, based on archaeological evidence found in Macedonia and Syria (Butler 1998 :5). Europeans learned to use such products to seal the seams of their boats and to create a variety of medicines and household products. The
rising cost of raw materials, however, forced European powers to turn to their respective colonies for potential sources. The first North American production may have taken place in Nova Scotia in 1606 (Butler 1998 :5). Spanish explorers have left diaries and reports of having seen Indians using pitch to seal cracks in their water craft. By 1718, English colonists along the Atlantic coast were sending England 82,000 barrels of tar annually. In 1907-1909 at the height of Florida’s Naval stores production, the enterprise employed more than 18,000 workers in more than 590 licensed plants (Figure 4). The industry peaked several years later but declined after World War II because the wartime development of synthetic Naval stores coincided with the exhaustion of the natural pine resources (Butler 1998:186). Revitalization efforts utilized bulldozers and dynamite to harvest the old pine stumps, drawing upon their pine sap reserves. By the early 1970s, natural Naval stores made up just a small portion of the market, and man-made products took over (Butler 1998:6).

![FIGURE 4. Turpentine processing camp at Munson, Florida. (Courtesy of the Alger-Sullivan Historical Society 1993.)](image)

Two-thirds of the world’s supply of natural Naval stores came from the Southeastern United States. Annual earnings rose to 40 million dollars, and during the peak years from 1910 to 1920, approximately half a million people were employed in the enterprise (Elliot and Mobley [1930]:ii). Naval stores production and shipment contributed to the economy of
Pensacola through the 1700s, the 1800s, and into the early 1900s. Local newspapers tracked the shipping in the port, highlighting the volume of locally produced naval stores. One such story in the *Pensacola Daily News*, dated 10 October 1907, reported the following cargoes in port: the steamer *Eugene*, with 262 barrels, the schooner *Lottie* with 144 barrels, the schooner *Honor* with 60 barrels, and the schooner *Norwich* with 90 barrels. Although the majority of naval stores were produced in the eastern Carolinas and eastern Georgia, the substantial quantities of these commodities produced in local forests, shipped over local river systems, and passed through Pensacola’s port facilities illustrate the importance of the industry to this area and the necessity of river and water transport for the region’s economy (Butler 1998:145).

Collection, processing, and distilling camps operated throughout the pine forests in both Escambia and Santa Rosa counties. Although unrecorded for the most part, traces of these activities can be found in correspondence from producers to local merchants, as well as on company letterheads that are contained in the Ray Hardware Papers from Pensacola, the Baker Block Museum archives, and the Luttrell Hardware papers in Brewton (Figures 5 and 6).

![Image](image.png)

**FIGURE 5.** Receipt for still products. (Pace Library History Center 1911. Photo by author, 2012.)
FIGURE 6. Letter from area farmer involved in the turpentine business. (Pace Library History Center 1912. Photo by author, 2012.)

The 1899 West Coast Naval Stores Company incorporation charter (Appendix F), declares their intention not only to use steamboats, tugs, barges, schooners, and other vessels but also to build whatever vessels may be needed. The charter also declares similar intentions for the building and use of railroads and steam-powered sawmills. Such documents illustrate that Pensacolians recognized the need for a variety of watercraft and railroad services and expressed the determination to build whatever satisfied those needs.

Generations of people used barges, keelboats, flatboats, canoes, steamboats, dugouts, and rafts up and down the river system to carry Native American trade, cotton, turpentine, Naval
stores, produce, livestock, pioneers, their families, and the vast output of the region’s farms (Figure 7). The photograph depicts typical rafting logs downriver. Fire smoke comes from the third raft, where men built a fire on a bed of mud. Sometimes lean-tos were built because it could take two to three weeks to make it all the way to Pensacola, depending on the river’s level. In addition to transporting thousands of lengths of logs, these huge rafts carried produce, supplies, livestock, and people by improvising platforms and shelters on top of the floating log rafts.

FIGURE 7. Group of log rafts along the Escambia River. (Courtesy of Flomaton Railroad Museum and Historical Society Archives 2008.)

As the region grew through the 17th, 18th, and early 19th centuries, transportation methods gradually shifted away from the river system to more economical methods. The development and expansion of commercially viable roads in Northwest Florida led to the cessation of most commercial river traffic. Beginning about 1765, early colonial maps indicate the Indian trails leading to Pensacola and Mobile. There seems to have been little change in these pathways, as noted in the papers of General Jackson by the early 1800s.

By the time of the Civil War, however, both population increases and the more formal administration of the United States provided for the creation of many road systems throughout
the region, as evidenced by the 1865 map (Figure 1). Prior to the outbreak of the war, area residents had invested in a number of railroads that crisscrossed the region. For the most part, all of these railroad lines were bisected, destroyed, or wrecked by the needs of the competing militaries. President Monroe authorized an early overland wagon route in 1824. That road connected Pensacola and St. Augustine along the original route of the “Old Spanish Trail” (*Pensacola Gazette* Microfilm 86, Reel 1). A 24-foot-wide road that was completed between the two cities by 1826 (Romeo 1996:41) evolved into a nationwide route from Jacksonville, Florida, to San Antonio, Texas, by 1925 (Ayers 1926:14; Krim 2005:63). By 1927, Florida motorists were able to make the trip from Pensacola to Jacksonville in 10 hours (*West Florida Magazine* 1927:13). Florida faced a special obstacle with the need of so many water crossings. As officials raised bridge funds, ferries accommodated motorists, and small boats continued to provide services to local shippers (Tebeau and Carson 1965:136).

Related to the use of small boats on Florida’s rivers were the public’s desire for the construction of canal systems in the state and the growth of commercial steamboating during the 1820s. Canal projects had captured the imagination and investment resources of Americans since the successful completion of the Erie Canal in 1828 (Tebeau and Carson 1965:137). In northwest Florida and across the panhandle region, Army engineers reported that traditional canals were not feasible because of persistent low water levels at high tide. Nonetheless, improvements involving the removal of snags, logs, and sand bars were undertaken on northern Florida’s major river systems, including the Apalachicola, the St. Marks, and the St. Johns. Upstream portions of the Alabama and Tombigbee rivers were also improved, allowing larger boats to have more access into Georgia and southern Alabama above Mobile (Tebeau and Carson 1965:138). Although successful canal systems were built in the north in the 1830s and 1840s, their use in the south was problematic because of the severe elevation rises that required extensive lock and dam construction. This situation is one of the major reasons that southern politicians eventually shifted their emphasis away from waterborne transport and began working to secure more federal funding for highway projects (Raitz 1996:iii).
Despite these issues, a canal company was formed in Pensacola in 1896. The Pensacola Inland Navigation Company proposed to construct a canal between Perdido Bay and Pensacola Bay, charge tolls, and provide for more weather-protected shipping. This project was never completed and seemingly ended the canal frenzy in this area.

Pensacola was isolated from extensive commercialization and exploitation of its rivers because of shallow conditions at the mouths of the Escambia, Blackwater, and Yellow rivers (Tebeau and Carson 1965:122). Only very shallow-draft boats could maneuver with any effectiveness. Boats drawing more than two feet had limited usefulness beyond the bay areas. The efficiency of river commerce was well established in the surrounding areas, and valuable cargos of timber, cotton, tobacco, Naval stores, and other products were being serviced on the far inland stretches of the Apalachicola, the Alabama, and the Mississippi rivers in the early 1800s. Thus, with rural roads mostly horse paths and no navigable north-south river systems, northwestern Floridians turned to railroads as a possible solution (Bowden 1982:16).

Although dredging and other improvements helped to increase steamboat business on some of the state’s major waterways and the post-war restoration of rail lines combined to stimulate economic growth, the steadily increasing highway construction programs brought about strong competition for all water-borne commercial traffic (Tebeau and Carson 1965:138). Highway systems had evolved along with the demand to transport heavier freight loads, and ultimately were able to carry large motorized trucks. Railroad systems continued to expand and transport large amounts of freight and people. Both of these transport systems diminished the viability of steamboats and the use of waterways for commercial transport. By the turn of the 20th century, transport on smaller rivers such as those in the Pensacola area was largely restricted to timber rafting. For the most part, smaller vessels were employed in the movement of log booms at the various sawmills along the rivers or for personal uses (Pettingill 1952:9). The last of the Conecuh-Escambia timber raft runs took place about 1937 (Brooks 1991:1). River transport by steamboats, beginning in the 1819-1820 period, had run its course and was substantially ended by 1920 (Goodrum 1968:ii).
Census data provides some of the key aspects of the history of the McDavid boat. Understanding population growth and resident trades can provide insights into this boat’s possible origins and its broader socio-historic context. Some of the earliest figures include “just over 3,000” noted in 1763, at the end of the First Spanish Period (TePaske 1975:2). In 1774, West Florida had a population of 2,990, including 1,200 slaves. By 1780, the total had risen to approximately 4,000 people, with one-fourth being slaves (Brose 1991:99). The first United States census taken in Florida in 1830 was the fifth national census. Escambia County counted approximately 2,518 people (U.S. Department of Commerce, Bureau of the Census (USDC) 1830:212.5, 19, 5).

The 1840 census is the first to describe peoples’ professions. Of the 3,993 residents of the county, relative employment includes 71 people who “navigate the oceans,” and just two people who “navigate the rivers” (USDC 1840:213, 704, 36). In 1845, Santa Rosa County had 1,917 people: 1,441 whites and 476 blacks (Rucker 1990:283). The 1850 census, the seventh national census, showed Santa Rosa County with 2,100 people and Escambia County with 3,100 people (Southern Genealogist’s Exchange Society 2001:i). The categories of professions expands as technology evolves, and when the 1850 census was made, Escambia County had gained 15 ship’s carpenters, 64 general carpenters, 4 fishermen, 19 sailors, 2 caulkers, and 1 sail maker (USDC 1850:214.5, 432, 59).

The 1870 census reflects some influences of technologies and skills learned during the Civil War, as well as the rapidly expanding economy and supply of products in this area once hostilities had ended and trade was reestablished. Among Pensacola’s watchmakers, silversmiths, auctioneers, druggists, jailers, ice merchants, and insurance salesmen were 15 ship’s carpenters, 47 seamen, 34 fishermen, 129 general carpenters, 2 caulkers, 2 sail makers, and 1 boat builder (USDC 1870:216.1, 593, 129).

Continued growth in the Escambia-Santa Rosa area is reflected in these census records, especially in the trades related to boat making. The Compendium of the Tenth Census 1880 lists Escambia County with a population of 18,990 people and Santa Rosa County with 7,814. By this
time, Mobile, Alabama, listed five ship building businesses. Another view of local shipbuilding shows 48 Florida companies with an average of 46 craftsmen. The state had 3,770 pilots in 1880, 30,651 raftsmen, 2,063 boat makers, 5,803 nail makers, 2,950 sail makers, and 17,452 ship’s carpenters, caulkers, riggers, and ship smiths. At that time, these shipyards consumed 95,100 board feet (1 inch x 12 inches x 12 inches) of pine, 38,800 board feet of white oak, and 176,400 board feet of other woods in constructing an average of 46 vessels per year. The census records for 1910 include 5 pilots, 24 sailors, 101 general carpenters, and 9 shipwrights. Santa Rosa County’s Business License Record of 1909-1910 lists two shipyards: George Bruce and John Karayork. Eighteen sawmills operated in the county, offering a supply of ship-building wood. Business licenses issued in 1912 and 1913 added another shipyard, the E. E. Sanders Company (Santa Rosa County Florida 1909-1913:i). In the late 1800s, the Mantel family lived in Brewton, Alabama, making cabinets, furniture, and boats (Escambia County Historical Society 1978b: 18).

Figures 8 and 9 illustrate the fact that boats and ships of substantial sizes can be constructed on very small sites. With access to the water on the bay or anywhere along the thousands of square miles that make up the Escambia-Conecuh watershed, late 19th- and early 20th-century craftsmen would easily have been able to build the McDavid boat.
FIGURE 8. Bud Seymour and 45-foot shrimp boat—Apalachicola, Florida. (State Archives of Florida 1986, Florida Memory FS88391.)
Northwestern Florida, intersected by the Escambia-Conecuh River valley and bounded by numerous bays and miles of seacoast, required early inhabitants to adapt to the semi-aquatic environment. By the time of European contact, native Floridians had learned to extract essential resources and the necessities of life from the region. All through the colonial and early American periods, pioneers exploited the region’s timber and other natural resources to make a cultural and commercial success of the Pensacola and northwest Florida areas. By the late 1800s, when steam power and internal combustion power plants were wedded to watercraft, all of the necessary component materials could be found in the Escambia-Conecuh watershed area. Vast quantities of yellow pine, a population skilled in boat building, thousands of miles of inland and coastal waterways burgeoning with products to move, and rapidly evolving worldwide markets encouraged local craftsmen to build boats adapted to their needs. It was from this undeniable impulse that the McDavid boat was undoubtedly built (Figure 10).
FIGURE 10. Site plan of the McDavid Boat. (Drawing by author, 2015.)
CHAPTER III
SITE DESCRIPTION

When discovered, the McDavid boat was entangled in brush and tree limbs, resting against the eastern shore of the Escambia River. Its position was slightly north of the boat launch facility at Mystic Springs Campground. The Southwesterly bend in the river at that point causes a continuous build-up of drifting debris against that embankment for several hundred yards. The opposite (western) bank of the river is a broad, relatively level, marshy/brushy area composed of fine sand deposits mixed with small- to medium-sized gravel. The vessel has been placed in a shallow slough area on the west side of the river where it can be better protected.

McDavid is a sparsely populated, unincorporated community approximately 31 miles north of Pensacola, Florida, in Florida’s western panhandle area. McDavid sits between the communities of Bogia and Bluff Springs approximately 11 miles south of Century, Florida, and 13 miles south of the Florida-Alabama border at Flomaton, Alabama. These communities are served by U.S. Highway 29. McDavid is situated approximately 20 miles east of the northwestern Florida-Alabama border, as formed by the Perdido River. The community center’s coordinates are 30.8662971 degrees north latitude and 87.3196980 degrees west longitude. The site is approximately nine miles south of the junction of the Conecuh River and the Big Escambia River. From this junction south, the river is named the Escambia River. The river meanders to a great extent throughout the watershed, so that mileage measured on the water is substantially greater than mileage measured along the local highway.

The closest downstream United States Geological Survey (USGS) gauging station is along state highway 184, 6 miles below Molino and approximately 15 miles below McDavid. Over a 22-year period, river volume at that gauge has averaged 9,480 cubic feet per second. The water has averaged three to four feet in depth, and at that point, the contributing watershed encompasses approximately 4,147 square miles. The closest upstream gauging station is near Brewton, Alabama. At that location, the river is named the Conecuh. Records there show that the
river discharges approximately 4,560 cubic feet per second and shows an average depth of 12 to 14 feet. At Brewton, Alabama, the Conecuh River watershed incorporates approximately 2,661 square miles (U.S. Geological Survey [USGS] 2015c).

The USGS area is named the Conecuh-Sepulga-Blackwater River Watershed. The Blackwater drainage system drains into northeastern Pensacola Bay but does not join the Conecuh-Escambia River system. Statistics pertaining to the Blackwater River are not included in the above figures. However, four other major river systems are tributaries to the Conecuh and to the Escambia: the Patsaliga River, the Sepulga River, the Murder-Burnt Corn Creeks (merged above Brewton, Alabama), and the Big Escambia Creek, joining the main system just below Century, Florida (USGS 2015b).

The Patsaliga River drains an area of 442 square miles, adding flowage of 610 cubic feet per second. The Sepulga, draining 470 square miles, provides 665 cubic feet per second to the system. The Murder Creek-Burnt Corn Creek, flowing together at Brewton, Alabama, contribute an average flowage of 511 cubic feet per second, draining more than 350 square miles. On the western side of the watershed, the Big Escambia Creek drains 193 square miles, and adds almost 230 cubic feet per second (USGS 2015a).

Counting the Conecuh’s watershed along the eastern side of the region, five major watershed systems (the bulk of which are in Alabama) combine into one river in the area of Brewton and Flomaton, Alabama. They then flow south into Florida, adding the Escambia River watershed, the sixth in the region. These conjunctions provide a huge volume of water that flows through the McDavid area; the USGS river gauge southeast of Molino measures approximately 4,147 cubic feet per second. For the most part, all of this water has flowed over the site. In total, the river system reaches northeastward approximately 230 miles into south-central Alabama from Union Springs, Alabama, to Pensacola Bay, Florida. Of that total distance, only 10% is in Florida. The tidal flow from the Gulf of Mexico can reach ten miles up the Escambia River. The transportation of a large sediment load causes the water to be very turgid, with low light penetration.
These data reflect the averages taken from 12 to more than 20 years. Gauging stations are added to and removed from the USGS system for a variety of reasons, and these rivers fluctuate from near-drought conditions of very low water levels to regular flooding conditions. The effects of coastal storms and frequent hurricanes are also included in the reports. In general, the five Alabama watersheds feature more narrow streams, while the Escambia system in the Florida section displays wide floodplains and a highly shifting and meandering river channel. Gauging stations record average river flow rates and help identify time periods when the McDavid boat could have been operated on the area rivers. However, seasonal variations in river depth with spring floods and summer droughts undoubtedly played a more significant role in the operator’s ability to use the vessel throughout the river system.
INITIAL DESCRIPTION OF THE MCDAVID BOAT

An initial report on the team’s findings noted the presence of both cut nails and drawn-wire nails. Metal pins and timber recesses/notches formed a space that indicated an inboard engine system had been carried on the boat. The report also described a stout iron bar beneath the stern, which provided protection for a propeller and a lower mounting point for a rudder system. The vessel was found to be about 22 feet long and 6.5 feet wide at amidships.

When the vessel was first recovered from the river, a small section of the hull broke free. The loose piece consisted of several 18-inch-long frame pieces fastened to several pieces of board of approximately the same length. Both cut nails and drawn wire nails fasten these pieces in a roughly square section of approximately two feet on each edge. A modern equivalent could be built by attaching two or three two-foot long 1 x 6 or 1 x 8 pine boards to several two-foot long 2 x 4s. Some faint traces of paint remained on the outer surfaces, indicating that the craft may have been painted a dark blue or dark green. In addition, a curved, half-round, split trim-piece was also attached on the outer surface. This piece appeared to have been a *rub-rail* along the outer surface of the side hull. It may have served to cover and seal the horizontal seam along the joining edges of the side-hull planking. Attached to the outboard edge of the gunwale is an outer trim piece, which appears as a single plank running along the remaining portion of the port side of the vessel and attached with nails to the upper ends of each pair of frame members (Appendix A, Picture 8, and Appendix B, Picture 1). Such rub-rails, caps, gunwales, and other elements protected the vessel from abrasive damage when moored to a pier or when moored in a group of boats. These elements also provided a grip-edge along the upper edges of the craft’s sides, reducing the risk of cutting a line or net over a sharp edge.

The hull planking (Figure 11) appears to consist of a center-line keel formed by two side-by-side 1 x 6s. These two planks likely form a keel along the length of the boat. The vessel appears to have a flat bottom, appropriate for use in shallow water conditions. Outboard of
that pair, there appears to be three pairs of 1 x 12s in matched pairs, three wide on each side of the keel pair. The outer pair, the number three plank on each side, are cut in an arch along their length. These two planks join the lower edges of the side hull sections on both sides of the vessel. The arched outer edge provides the overall shape of the hull, which is presumed either to have been wide and flat at the stern with a normal point at the bow, or to have had a flattened bow, resembling a modern *jon boat*. Because the entire bow section is missing, determining its original bow design may not be possible.

FIGURE 11. Bottom hull planking at the stern. Planks 1, 2, 3, and 4 appear to be 1 x 12s or 2 x 12s. Planks 5 and 6 appear to be 1 x 6s or 2 x 6s, form the centerline of the boat, and may run the full length of the hull to form a keel. (Courtesy of Division of Anthropology and Archaeology, 2011. Numbers and arrows added by author, 2012.)
Two-thirds of the starboard side is gone, and the remaining section is badly rotted. The lower hull sections are attached to the frames which cross beneath the vessel at two-foot intervals. These frames are constructed of doubled 2 x 4s. About two-thirds of the port side is intact and is solidly attached to the frame members. On both sides of the vessel, the upright frames are also made of 2 x 4s that are nailed at their bottom ends to the bottom cross frames, angled outward at approximately fifteen degrees. Along the port side, a section of the gunwale remains and covers about half of the remaining port side upright frames. It was made from a 1 x 6 board and shaped along its length to match the curvature of the hull’s side contour.

The stern section is largely present. It surrounds a large block of timber, which had been drilled through to accept a propeller shaft. That block protrudes through the hull beneath the stern hull planking and forms a skeg upon which the propeller’s protective iron bar is mounted. The propeller drive shaft hole can be seen on each end of this heavy timber. This heavy block of wood is 8 to 12 inches thick, 3 to 4 feet long, and 2 to 3 feet tall. Sitting on edge, it forms a substantial piece of the vessel’s framing.

Immediately forward of this timber block, there remains a framework of heavy timbers which provided a motor mount, or bed. These two heavy timbers sit side-by-side atop a heavy wooden framework that is attached directly to the main cross frames of the hull. This pair of matched timbers is 3 feet long and has a cross-sectional measurement of 8 inches by 18 inches. Also mounted to the deck frames on a narrow edge, the timbers are major components of the hull’s framing. These three timbers, mounting the power plant and housing the drive shaft, take up a third of the vessel’s interior space. There remains little deck space for any significant cargo. Forward of the engine area are four floor boards lying side-by-side, extending towards the vessel’s bow and nailed to the tops of the main cross frame members. These planks are 1 x 12s extending forward on the starboard side and forming a small section of deck, allowing space for people or a small quantity of cargo. Beneath this deck area are several lengths of heavy boards which form sections of the outer hull just as it curves inward towards the keel line, forming the hull’s shape just aft of its joining at the stem. None of the outer hull is visible in the photographs.
The vessel was not brought out of the water high enough to see or record the lower hull and keel sections.

Along the port side and close to the forward motor mounts, a piece of wood is attached to one of the upright frame members beneath the gunwale. The attached wood is 4 feet long, 4 inch square, and can be rotated around a number of positions along the side of the vessel. The timber can lie across the motor-mount timber blocks, or its far tip can rest on the floor. The piece may have been part of a tiller/rudder system, or it may have supported an exhaust system member, a hose, or a pipe of some sort. The timber may have been a support member of a roof system or canopy, or part of a cabin wall.

A section of hose protrudes from the frame timbers along the starboard motor-mount timber. The hose may have penetrated through the hull, acting as a water inlet to cool the motor. The hose is 1 to 2 inches in diameter, and because it is double-walled, it may have been constructed to allow for the safe passage of hot water.

Attached to the inside surface of the stern hull planks is a single 2 x 4 cross-member, similar to the pairs of 2 x 4s that make up the hull’s frame members. The cross-member may have been the final cross-frame member at the vessel’s stern. Two sets of three notches have been cut on the rear vertical surface of the cross-member. The two sets of notches are equally positioned just in front of the area where the rudder pivot bar would have come up through the hull at the stern, so they may have provided a set of mounts for the attachment of pulleys or pins to guide the rudder-control cables. They seem to divide the span equally and would make an adequate mounting system for a set of cables fixed to control the rudder. Because of the size and position of the motor, the use of a hand-tiller would have been impractical.

The measurements recorded by the survey team show that the dimensions of the frame components and the hull planking are not standard for dimensional lumber. For example, a modern finished 2 x 4 measures 1.5 inches by 3.5 inches, while an older unplaned rough 2 x 4 measures 2 inches by 4 inches. The lumber industry began to call for standardized sizes in 1922, and by 1961 the federal government issued grade standards that required all mills to
make dimensional lumber products of the same size (American Lumber Standard Committee, Incorporated 2015). Non-standard lumber found in the McDavid boat can be explained in a number of ways. The timbers may have been produced prior to 1922, or they may have been ordered in these sizes. The timber may have been made at a small, one-man mill that made wood for a family or a small local area. The timber may have been taken from a scrap pile or a discard pile. Whatever the case, it is possible that the McDavid boat may have been built at a small, local saw mill, using its own material and designed for its own uses on-site.

Because all of the wood components are uniform, even-edged, and true along their lengths, they appear to have been planed. Planing mills are known to have been in use in the Peters Mill at Brewton in 1887 (Waters 1983:4) and in the Escambia Lumber Company near Pollard in 1886 (Waters 1983:13). The Sullivan Timber Company operated planers at the Wallace Mill in 1890 (Waters 1983:20). John Hunt’s Black Water mill was sold in 1849, and a planing mill was part of that complex (Eisterhold 1973:275). Area mills had begun converting to steam power after 1834 (Eisterhold 1973:268), and there are no indications of the use of planing mills associated with any of the water-powered mills, although a few continued to operate into the early 1900s and may have adapted planing machinery to be powered by a water-wheel. Thus, planed lumber may be more associated with steam-powered mills and may indicate that the boat is of more recent construction.

The boat is missing perhaps a third of its bow, including its forward hull sections. Half of the starboard side and about a quarter of the port side are gone. The shape of the bow may never be known. The power plant has been removed, along with any transmission and drive shaft that may have been aboard. Two adjustable pin-style motor mounts remain, along with an iron bar extending beneath the area where a propeller would have been mounted. Except for these few pieces and the remaining nails, all other iron appears to have been removed. Nothing remains of the rudder or steering systems.
Small, engine-powered work vessels like the McDavid boat have been overlooked by Florida’s historians. Many Native American dugout canoes have been discovered in Florida in recent years, and much has been written about their background and of the cultures they supported. Vessels in the historic period, such as tugboats, fishing boats, steamboats, schooners, and ocean-going ships, have also been quite well defined. The McDavid vessel, however, is something in between these other major groups, and there is very little documentation of boats of this type. Therefore, major goals of this research were to place the vessel in its proper position in the lineage of Florida’s transportation history and to theorize its significance to the cultural evolution of the Escambia River watershed area.
CHAPTER V
COMPONENT ANALYSIS

Nails

Modern drawn-wire nails are made in specialized machines which draw mild steel wire through a series of reducing cones to reach the desired diameter. High-speed, fully automated nail machines have operated in the United States since the 1890s (Edwards and Wells 1993:2). Mass-production, suitable product strength, and lower manufacturing costs combined to make the wire nail more attractive to consumers. From the 1890s into the 20th century, drawn-wire nails displaced cut nails (Edwards and Wells 1993:6):

For the past two or three years the demand for the wire nail has greatly exceeded that of the cut nail, which is clearly evidenced by the fact that the majority of local retailers no longer keep the cut nail in stock; this is partly due to ignorance of the merits in regard to the holding power of the two kinds of nails, and partly because the wire nail is nicer to handle, and a little less likely to split the wood. (Parker 1897:2)

The oldest type of nail was the hand-formed wrought nail. Copper specimens appeared in Egypt, Sumeria, and China and are dated to about 5,000 years ago (McCarthy 2005:30). Wrought nails found an expanding variety of uses and spread around the globe during the Bronze Age, 3300 BCE to 1200 BCE, with production switching primarily to iron and continuing throughout the Iron Age, 2000 BCE to 500 CE (Nelson 1962:1). By the mid-1400s, nails had become standardized with size and type nomenclature still in use today (Nelson 1962:2).

Cut nails, the newer style of iron nail, came into use in the post-revolutionary United States in the 1780s and 1790s (Nelson 1962:6; Phillips 1996:4). Cut nails were sheared or sliced from a flat ribbon of iron and formed into a thin, tapered, triangular-shaped iron sliver. Chopping blades cleaved each nail from the end of a flat plate of iron fed into the device. Cut nails were made of iron until the Bessemer refining process introduced steel into the nail-making business
in the late 1880s (Edwards and Wells 1993:13). Iron, machine-made cut nails were the dominant products available from the 1790s until 1888, when the more durable steel cut nails could be made efficiently.

Researchers find that knowing when a particular type of nail was invented or when production began in an area does not correlate precisely with the dates when those items may show up in archaeological settings. The delay in the time that an item is invented and when it becomes common in the marketplace is known as lag time, an offset that occurs again when production or common use ends. Stockpiles of the original items continue to be sold until they are gone, and people use up their own supplies over time as well (Adams 2002:41). Thus, full, market-wide diffusion of new products may take up to fifteen years, and use life, the period an object remains in common use, may be much longer (Phillips 1996:14).

Nails typically found in shipwrecks today come from three technologies for the manipulation of various metals: hand-wrought nails, cut nails, and drawn-wire nails. Two of these were recovered from the McDavid boat in June 2011. A small section of hull framing and attached planking provided a few cut nails and several drawn-wire nails. Using the timelines described above, the cut nails can be provisionally dated from the time period of the invention of rolling mills in Europe, about 1775 (Edwards and Wells 1993:15), until the late 1890s, when cut nails were gradually replaced with drawn-wire nails (Parker 1897:2).

Cut nails were plentiful in colonial America in the Revolutionary War period, and by the late 1700s, cut nails were being mass-produced. For example, a mill in New York ran 96 cut-nail machines simultaneously to keep up with the demand (Gordon 1996:69). The timeline for the cut nails found on the McDavid wreck ends at about the 1890 to 1900 mark, given the replacement of cut nails in the marketplace with drawn-wire nails. If local merchants were not replacing stocks of cut nails by 1895, then this latter date may be the more appropriate date to use in the McDavid boat (Parker 1897:2).

First appearing in French patents in 1806 (Middleton 2005:57), drawn-wire nails slowly gained popularity until they reached 92% of U.S. markets by 1919 (Adams 2002:72). Drawn-
wire nails continue in use today, providing a temporal range of approximately 120 years for their
common use and availability. Since all modern drawn-wire nails are fundamentally identical,
there is little use in trying to narrow down their manufacture date. There have been no significant
changes in nail-making machines in the last hundred years (Edwards and Wells 1993:20).
Unfortunately, there is little diagnostic information available from the wire nails other than to say
that they most likely date no earlier than 1895.

There are several identifiable characteristic seen on the cut nails. They all have inline
grain and appear to have blunt, square-cut tips, indicating that they came from rolled bar stock.
This cut nail type was manufactured after 1830, when wide-roller mills were invented (Wells
2000:326). Longitudinal grain pattern in these newer types of cut nails give them extra strength
and flexibility. Because they could be clenched—bent back on themselves—without breaking
like cross-grained cut nails, the cut nails found more uses and acceptance in the marketplace.

The cut nails from the boat also exhibit paired burrs on their rear edges. These same-side
burrs running the length of the nail indicate that it was produced by flipping the flat stock 180°
between each shear cut. Newer nail-making machines flipped the stock over, resulting in the
observed pairing. Earlier machines were operated by a workman who “wiggled” the stock back
and forth sideways between shear passes. Thus, nail plates were struck from the same side with
each cut, resulting in burrs forming on the opposite edges rather than on paired edges. According
to Edwards and Well’s Common Nail Type chart (Figure 12), same-side burrs appear on nail
types 5 through 10. The corresponding dates show that the cut nails from the McDavid boat
began in 1810 and continued in common use until 1910. With the application of lag-time factors,
this range may reasonably be adjusted to 1820 to 1920.
The McDavid boat’s cut nails are all face-pinched. To make these, jaws grasped the nail shaft either from the top or bottom (the face surfaces) or from the sides (the side surfaces) while a hammer-like device struck the end to form the nail head. This process produced both the earlier-style side-pinched cut nails or the newer-style face-pinched cut nails. Face-pinched cut nails appear on the Edwards-Wells seriation chart around 1815 with the type 6 nails and continue in use through the early 1900s with the types 8 and 10 cut nails. The heavy use periods for these three nail styles are 1815 to 1845 for the type 6, 1830 to 1885 for type 8, and 1885 to 1895 for type 10, which was replaced by drawn-wire nails. Because both cut nails (circa 1820 to 1920)
and wire nails (circa 1895 to the present) were found in the vessel, several possibilities exist. First, the boat may have been built as a complete unit at one time. Second, it may have been built with older material and later modified using more modern materials. Third, it may have been repaired a number of times so that it presents many different types and ages of materials.

The McDavid vessel is situated about 40 miles above Pensacola, Florida, and 40 miles below Brewton, Alabama. Although no documents are available to indicate when different nail types first became available in the Escambia-Conecuh watershed region, cut nail suppliers appear in Pensacola’s Ray Hardware invoices in 1912 (Figure 13) and in Brewton’s Luttrell Hardware invoices in 1901 (Figure 14). Both of these suppliers had been in business in their respective trade areas since the mid-1800s. Pensacola’s Ray Hardware began as Avery hardware in 1855 (Pace Library History Center 1911-1920). According to both the Luttrell Hardware Papers and the Ray Hardware Papers, the vessel’s hardware—cut nails and drawn-wire nails—have been readily available in the Escambia-Conecuh watershed region since the mid-1800s.

FIGURE 13. A 1912 supplier of cut nails to the Pensacola, Florida, area. (Pace Library History Center 1912. Lines added by author, 2012.)
Human actions present another element to be considered when using nails to help determine the date of a ship’s construction. Not only did people save, re-use, and horde nails, they also continued to make old-style nails long after new technologies and new machinery came into the marketplace, especially in more rural areas (Phillips 1996:14). In addition, modern-day restorers can buy hand wrought and cut nails from specialized manufacturers, and these items can show up in situations that are thought to be older.

In summary, the McDavid boat presents two types of nails, cut, and drawn-wire nails. Cut nails date from the mid 1800s, while drawn-wire nails date from the late 1890s. The hardware company invoices illustrate the availability of both types of nails by the early 1900s in communities along the Conecuh-Escambia watershed. Cut nails could date the boat to 1810, while wire nails could date the boat no further back than 1895. However, other components of the boat reflect more recent dates for its construction.
In the process of discovery, experimentation, and eventual success in taking power off shore, three men have played key roles: Thomas Newcomen, James Watt, and Robert Fulton. Newcomen’s (1664-1729) engine excavated water from coal mines and facilitated the emergence of Great Britain’s industrial revolution (Marsden 2002:3). Watt (1736-1819) transformed the stationary land-based steam engine into a universal power source for an increasingly industrialized world. He modified the Newcomen engine to stabilize the system, providing reliability, more power, and safer operation. Watt’s enhancements fostered the adaptation of steam power to a broader variety of industries and provided Fulton the engine with which he created a prototype to solve the world’s maritime needs (Rolt 1963:93). Fulton (1765-1815) mounted one of Watt’s steam engines in a ship that he built, harnessing the engine to a system of levers and axels and to a pair of paddlewheels on either side of the vessel approximately amidships, “an assemblage of levers and rods, cogs and wheels” (Sale 2001:11). Fulton ran the ship successfully in August of 1807, passing a test set by the New York legislature and winning a 14-year monopoly on New York waters. Thus, Fulton and his North River Steamboat mark an important stage in the nation’s early development, the “ushering-in of the American Industrial Revolution” (Sale 2001:12).

In addition to steam power, gasoline-fueled internal combustion engines were also adapted to marine use once they became available. Early regional examples include Ray, Walker, and Bethea’s Nellie, built in 1907 and used to transport logs and freight to Pensacola. Another contemporary gas-powered boat was built by Brewton’s Schad and Black in 1910 and was also used to transport products to Pensacola (Waters 1975:90). The availability of marine gasoline engines in the Pensacola area is seen in inventory documents from the Ray Hardware Company and the Pensacola Gas Engine and Supply Company. In 1911, both companies supplied motors and repair parts for the Monarch, Oriole, and Gray engines. In 1912, the Pensacola Launch Company provided services for the Sterling, Wolverine, Reynolds, Cameron, Wonder, and Fox engines along with several more brands (Pace Library History Center 1911-1920:1-14). As
engine technology evolved in the late 1800s, the discovery, refinement, and distribution of fuels and lubricants kept pace.

The Escambia County Incorporation Records (Escambia County Florida [ECF] 1899:1.175) span the period from 1892 to 1922 and outline a new corporation’s business plan, including inventories of its equipment, vehicles, boats, and products. The shift in transportation methods from sail and steam-powered ships to gas-powered vessels is evident in those records, and the presence of early automobiles and gas engines in Pensacola, along with repair parts and trained personnel, supports the theory that an internal combustion engine was used in the McDavid boat.


An early supplier of gasoline may have been the Pensacola Oil Company, selling “oil products” in 1895 (ECF 1899:1.36). The Pensacola Gas Company sold petroleum products in 1896 (ECF 1899:1.81). The first definitive trace comes from the Sherrill Oil Company, selling naphtha, benzene, and gasoline in 1920 (ECF 1899:4.302). The Escambia Oil Company sold naphtha, gasoline, benzene, kerosene, oils, and grease in 1924 (ECF 1899:4.363).

Local car dealers, repair shops, and transfer companies started with Banks in 1909. Thus, a beginning date for local gas sales is in the period from 1900 to 1910. Indeed, the gas-powered riverboat Nellie, built in 1907 and mentioned above, fits right into that date range. The Model “T” engine began production in 1909, and Figure 15 shows a Ford Model “T” engine adapted for
marine use. Thus, it seems likely that the McDavid boat could not have been powered by a gas-fueled engine prior to the period from 1890 to 1910.

FIGURE 15. Ford Model T engine adapted for marine use. (Courtesy of Model T Club of America 2013.)

Propeller Systems

Screw-propulsion technology was well refined and generally well understood by the mid-19th century. Propeller systems were available in the commercial marketplace by the 1860s to 1870s (Weissenborn 1861:137). The McMillan Trust Archives (1950a) at Brewton, Alabama, has the names of thirty steamboats that were in use in the Escambia-Conecuh watershed from the late 1800s. Ten of these steamboats were fitted with propellers rather than paddlewheels. The earliest boat listed is the Mary Louise, built in Philadelphia in 1871. The others are the 1877 Big Nellie, origin not listed; the Nellie, built in Camden, New Jersey, in 1879; the Jumbo, built in Bay Point, Florida, in 1883; the Monarch, built in Charleston, South Carolina, in 1883; the Celestine, built in Newburg, New York, in 1883; the Britannia, built in Baltimore, Maryland, in 1883; the
Okaloosa, built in Milton, Florida, in 1886; the Maggie, built in Mobile, Alabama, in 1893; and the Undine, built in Key West, Florida, in 1900.

With the exception of the Celestine, a gap of 4 to 12 years exists between northeastern and southern shipyard construction dates with respect to the adoption of screw propulsion systems. The one locally built ship, the Okaloosa, was built in Milton in 1886. The other two Florida-built ships—Bay Point’s Jumbo and Key West’s Undine—were built in 1883 and 1900, respectively. The Okaloosa falls in the middle of these dates and may hint at the availability of propeller systems in this area by 1886.

King’s History of Santa Rosa County: A King’s County, notes that at least six different yards operated in the Blackwater River-Milton, Florida area. King relates these shipyards to the region’s lumber industry from the late 1800s to early 1900s. Yards building propeller-powered vessels would have been operated by the Adams, Bushnell, Bruce, Forsythe, Hall, Hoodless, Jernigan, Lewis, Marquis, Munson, Ollinger, Overman, Roberts Robinson, Rosasco, Sindorf, Simpson, Stewart, Stevens, Thompson, Tomasello, and Wright families (King 1972:33). Military shipbuilding in the region took a foothold in the Mobile-Chickasaw, Alabama, area in the early 1910s (Kaetz 2011). The 1911 Ray Hardware invoices show the Climie Boatbuilding Company, of Josephine, Alabama, and the Hoodless Shipbuilding Company, of Milton, Florida. These records illustrate the shipbuilding industry in the Pensacola area, especially the demand for watercraft of many types for use in the lumber industry.

Although concepts of propeller-derived power are rooted in the early historic period, the transformation of such methods into use in boats and ships did not begin until the late 1820s. The system was refined throughout the period leading up to the Civil War, and marine propeller systems had become quite common by the late 1800s. Because steam-powered, propeller-driven vessels were relatively uncommon at the end of the Civil War, it is more reasonable to assign a date-range in the late 1800s to the McDavid boat.
**Rubber Hose**

A small hose protrudes from the deck planks beside the motor mounting timbers on the starboard side of the McDavid boat (Figure 16 and Appendix B). The hose is lined, suggesting a specialized product, possibly a composite material to resist high temperatures. Such a design suggests an outlet port to allow the removal of hot engine coolant into the water. Alternately, the hose may have drawn cool water from beneath the boat to circulate within the motor (Coates 1987:26). A third use may have been as a seal or collar around a pipe, or the pipe may have been a bilge drain. The presence and use of this component provides another marker that helps date the construction of the vessel.

![Diagram of engine mounting section](image)

**FIGURE 16.** Engine mounting section showing the rubber hose set into the decking. (Courtesy of Division of Anthropology and Archaeology, 2011. Numbers and arrows added by author, 2012.)

Rubber has been greatly modified into many identifiable products which can help researchers assign date ranges to items. Modern rubber is largely synthesized from petroleum. World-wide production in 2005 was 15 million tons, of which only 6 million tons came from natural agricultural plant resins (Loadman 2005:xv). In 1824, an Englishman, Thomas Hancock, made surgical tubing. In 1825, Charles Macintosh began making his famous rubber-coated
raincoats. In 1858, rubber was used to insulate electric wires (Krishnamurthy 2002:425; Coates 1987:28). From 1900 to 1910, Butadiene formulations were discovered, ushering in the modern synthetic rubber industry. Throughout World War II, a host of new polymeric materials were made, including synthetic fibers, plastics, and elastomers (Quirk and Morton 1994:23).

People living in the Pensacola area may have been able to buy rubber products through Panton, Leslie, and Company in the 1700s. That business continued through the period when rubber was developed into marketable products by British merchants, as well as during the time when American entrepreneurs were beginning to supply local customers. Avery Hardware began in 1855, when many new rubberized products were becoming available to world-wide trade networks. Because the rubber hose found in the McDavid boat would have been available in the Pensacola area since the 1860s, it provides little help in determining the boat’s construction date.

Yellow Pine

Three wood samples were taken from the McDavid boat’s salvaged hull section. Sections of the rub-rail, the outer hull planking, and a frame member were analyzed by Dr. Amy Mitchell-Cook. All three were identified as southern yellow pine (Pinus Sp.), a group which includes longleaf yellow pine, slash pine, loblolly pine, and shortleaf pine. The yellow pines are common to the southeastern United States. Many people have written of their experiences in the longleaf pine forests of northwestern Florida. One of these early residents was Mr. Victor Hutchins, a railroad employee at the turn of the century who wrote in his memoirs that a number of timber species were commonly harvested in the Florida panhandle: cypress, poplar, dogwood, short leaf pine, magnolia, and hickory. However, the long leaf yellow pine was the dominant species and “many acres would cut 20,000 board feet of lumber per acre and some, even more” (Hutchins 1973:1). Numerous documents in the Ray and Luttrell hardware collections attest to the production and use of yellow pine lumber in the river valley.

Yellow pine varieties grow within a zone bordered by eastern Texas, northern Missouri, and southern Illinois and eastward across the Carolinas to the Atlantic. Florida, Alabama, Mississippi, Louisiana, and Georgia have been the home of major yellow pine industries since
colonial times. Northwestern Florida and the southeastern region in general were known for their vast supplies of longleaf pine and naval stores since the early Spanish occupation (Kohlmeyer 1983:86). Colonial Spain shipped huge quantities of pine from Florida to Cuba in the early 1600s in order to develop Havana into the “busiest shipbuilding site in the Spanish Empire” (Özveren 2000:32). Spain’s goal was to make Havana the primary naval base in the Western Hemisphere (Knight and Liss 1991:384), building merchantmen and armed escorts to service the treasure fleets (Özveren 2000:32).

The pine forests throughout the Conecuh-Escambia watershed produced such quantities of timber that in 1870, 85 ships transported more than four million board feet of lumber out of Pensacola’s port. By 1875, export trade had risen to 18 million board feet (Smith 1973:96). The financial benefits of the timber industry to Pensacola and the surrounding area are illustrated by reports that by 1842, the Forsyth-Simpson Mill and the Hunt Mill, both in Milton, were producing more than $100,000 worth of lumber annually (Eisterhold 1973:273). Between 1821 and 1858, approximately 29 million board feet of lumber left Pensacola for foreign ports, while 162 million board feet were sent to both foreign and domestic markets (Eisterhold 1973:279).

The availability and use of southern yellow pine lumber is well documented in the history of northwest Florida and throughout the Escambia-Conecuh River Valley region. Although the large mill operations harvested and shipped hundreds of millions of board feet of yellow pine lumber through Pensacola’s port, many small, family-owned mills processed yellow pine in communities like McDavid, Bluff Springs, Pine Barren, Molino, Jay, and Mineral Springs. These small mills, some powered by waterwheel technology, continued to produce yellow pine products on a small scale well into the 1900s (Phillips 1996). Such data support the theory that the McDavid boat was built with local lumber from a small, family-operated mill that could have been situated anywhere within the watershed region.
CHAPTER VI
RANGE

During the summer of 2012, a survey was conducted to determine the range of possible operations of the McDavid boat. The preliminary measurements of the vessel’s remains suggest that it was approximately 20 to 30 feet long, approximately six feet wide, and may have drawn two feet of water. With these dimensions in mind, a number of the highway bridges crossing the tributary rivers were visited and observations made of the width and depth of the rivers at each location. These data provide an indication of the areas in which the vessel could have been used and suggest a wide region of possible operation (Figure 17).

FIGURE 17. Conecuh-Escambia and Blackwater river basin map. The Blackwater River was not part of the survey. (Courtesy of the Alabama Department of Environmental Management 2014:3.)
The Big Escambia River was viewed at the Grissett Bridge crossing. This location is near the river’s headwaters, which rise from marshy lowland areas and springs surrounding the site of the Cannan Free Church. The river’s width was measured at 67 feet, and its depth varied from 1.5 feet to an estimated 2.5 feet. The Big Escambia appears to be navigable by small craft at Grissett Bridge, suggesting that it would have been accessible to the McDavid vessel. The river was also surveyed downstream at the crossing of the Robbinsdale Bridge approximately 7 miles southeast from Grissett Bridge. Three additional viewings of the Big Escambia were done at the Sardis Church Road, northwest of Flomaton, Alabama; the bridge crossing on Highway 31/118 on the northern edge of Flomaton; and southeast of town at the crossing of the Old Fannie Road. All of these locations appear to have been navigable by the McDavid vessel.

The Burnt Corn and Murder Creeks combine south of Brewton, Alabama, before merging with the Conecuh River. Their headwaters are north of Brewton, rising from springs and marshy lowlands, the Burnt Corn to the west and the Murder to the east. The Burnt Corn was surveyed at a site near its origins at the crossing of County Road 77 on the Appleton Road in Brewton. Here, the river is 80 to 100 feet wide and approximately 2 to 4 feet deep. State Highway 29 crosses the Burnt Corn in Brewton, where the creek is of the same general width and depth. Murder Creek was viewed near its origins northeast of Castleberry, Alabama, and in Brewton, Alabama, where it crosses beneath the Highway 29/41 bridges in East Brewton. Both the Burnt Corn and the Murder are substantial flowages by the time they merge at Brewton and are navigable on an intermittent basis. During periods of drought, however, both streams are substantially blocked to boat travel.

The Sepulga River (Figure 18) was surveyed near its headwaters in the lowland region between Evergreen and Georgiana, Alabama. From the Highway 84 bridge east of Evergreen, the Sepulga is 30 to 50 feet wide and 2 to 3 feet deep. At the site is a state-maintained canoe landing, and the Pigeon River also crosses Highway 84 before merging with the Sepulga just east of that site. Both rivers are navigable at these sites. Downstream, the Sepulga passes the small community of Brooklyn, gathering several small creeks along its course. The Sepulga has
become a substantial flowage at Brooklyn, and several miles below the community it joins the Conecuh River. At this site, the 1834 loss of the paddlewheel steamboat Shaw took place, an event which confirms the fact that at one time, the Sepulga had the capacity to allow the passage of large vessels into the upper watershed regions (McMillan 1949).

The Patsaliga River (Figure 19) rises from springs in the marshlands north of Luverne, Alabama. It was viewed at the crossing of State Highway 10/29 and appeared navigable. Downriver, another viewing was done at the crossing of County Road 82 and Gantt Lake reservoir near Andalusia, Alabama. Both sites appear to have been substantial enough to have allowed for the McDavid boat’s navigation. At Gantt Lake, the Patsaliga is approximately 150 feet wide and quite deep.

The Conecuh River is contained in the easternmost watershed group. Its headwaters rise from springs and lowland marsh areas west of the community of Union Springs, Alabama. From this area, the Conecuh-Escambia River system flows for more than 200 miles to Pensacola Bay, ultimately emptying into the Gulf of Mexico. Above the Gantt Lake reservoir area, the Conecuh is relatively narrow and extremely convoluted, reflecting the almost flat profile of the landscape it drains. It is greatly supplemented by the waters of Gantt Lake as those waters accumulate behind the hydroelectric dam. Below the lakes, the Conecuh admits both the Patsaliga and the Sepulga systems before the Conecuh reaches Brewton. Surveys along the upper Conecuh indicate that the river would have supported navigation as high as Gantt Lake and seasonally above that in both the Patsaliga and Conecuh systems. These data are summarized in Appendix G.

The data provide an overview of two observational surveys conducted ten months apart in 2012 and 2013. GPS readings, photographs, and notes were recorded to visualize the possible range of operations for the McDavid boat based upon a draft of two feet for the vessel. These data suggest that during a normal seasonal cycle, the boat may have been capable of reaching close to 90% of the watershed during high-water periods, while being able to reach close to 60% of the range during low-water periods. The winter-spring season is traditionally the high-water period, and the summer-fall season is traditionally the low-water period. Illustrations of these two peak periods and of the tributary systems are contained in Appendix H. Three sets of survey photos are contained in Appendices I, J, and K, showing numerous points along the tributary creeks as well as the major river bodies. The third set of pictures, taken in February, 2013, show extreme springtime conditions following heavy rains.

During the 1700s and 1800s, canoes, rafts, and keelboats carried products to Pensacola markets. In 1821, approximately 17 keelboats transferred products throughout the river system. They were 60 to 70 feet long and 8 to 10 feet wide and capable of carrying up to 200 bales of cotton from southern Alabama producers to Pensacola (Riley 1913). In 1830, residents petitioned Congress for funds to operate a dredge-snag-boat to help clear the river (Rucker 1990:156). The loss of the sternwheeler Shaw in 1834 ended efforts to bring large boats upriver and forced
residents to continue transporting their produce on small boats, barges, and keelboats. (Cole [1910]). Throughout the 1800s as upland communities grew, many other commodities flowed to Pensacola, including approximately 2,000 deer hides in 1840 (McCreary [1930]). The need for continued improvements convinced the Florida legislature to plan a $12,000 program for dredging and snag removal as late as 1897 (Rucker 1990:156). Even with records indicating that flowage seemed sufficient, commercial uses of the river system have been limited throughout the region’s history by the seasonal fluctuation of water levels. Efforts to widen and open the river have been undertaken for many years, but only small boats like the McDavid boat have proven useful.

The McDavid boat has very little cargo space and was probably used as a tow boat, hauling produce barges and log booms on the river. The vessel was capable of navigating substantial portions of all the major rivers and creeks that contribute to the Escambia-Conecuh system. In traditional high-water periods, approximately 90% of the overall watershed would have been accessible to the boat, approximately 3,463 square miles. In traditional low-water periods, up to 60% of the area may have still been accessible, approximately 2,308 square miles.
CHAPTER VII
THEORY

The McDavid boat exists as a singular artifact without any known correlates, so it cannot be classified by known attributes of surrounding and similar artifacts. Without a firm view of its origins, this vessel presents its assemblage of materials, its structural elements, images of its original form that can be projected by the shape of its present state, and suggestions of its means of propulsion. There are no associated artifacts available which could help to define the boat, and there are no associated strata or an impact or deposition site where its remnants, cargoes, and personal effects would have come to rest and be available to researchers.

South (2002:15) directs researchers to the hypothetical-inductive-deductive scientific cycle to visualize facts or propose theories about the facts of a particular site or artifact based on an object’s observable, physical attributes. Inductive reasoning about the McDavid boat examines each of its elements to reach conclusions about the finished vessel, while deductive reasoning examines the existing vessel and suggests what individual elements needed to have been brought together to create the boat. Interestingly, many of the material elements of the McDavid vessel provide a distinct a *terminus post quem* (TPQ). Characterized by Hume as the “cornerstone of all archaeological reasoning” and as a “date after which the object must have found its way into the ground” (South 2002:202), TPQs are essential date markers. For the McDavid boat, numerous TPQs in the construction help establish ultimate limits on the assemblage’s age and serve as markers to illuminate the most suitable theory for the vessel’s origin.

Two distinctive TPQs on the McDavid boat are the engine system and the propeller system. The McDavid boat presents a unique situation for maritime archaeologists because it exists separate from the traditional context of a wreckage site. Similarly, the boat provides no correlation to a population center from which historical data can be extracted and brought into some relationship with the vessel. Without the integrity of a defined site testifying to the
depositional and post-depositional events that help define shipwrecks (Muckelroy 1998:268), the McDavid boat has no potential for such a primary-level examination. If it is the remains of a Conecuh-Escambia River Valley vessel and was associated with people and cultures within the river valley, a regional context—rather than a wreck-site context—becomes the only available approach to defining the boat.

Even without definitive artifacts from this boat, researchers can speak to the cultural images and ideas that boats of all types have inspired. Boats are found extensively in art and literature throughout America and have populated folklore, fables, and perspectives of rural life, contentment, and idyllic pastimes. Boats play a role in America’s work and have always played a role in Americans’ imaginations. In the South, the steamboats, keelboats, and river barges “carried the tentacles of slavery and racism” (Buchanan 2004:5) as well as ideas of “liberation and freedom” (Bloom 1986:12). The use of boats to navigate waterways provides “leisure, pastoral beauty, fantasies of romantic times . . . absence of constraint, source of unity, an escape from a menacing civilization . . . [and] launches a quest for freedom” (Bloom 1986:12). Such images of the utility of boats speak to concepts of historical ecology and interactions of societies to their environments. Boats transport the commodities and products of a culture. They carry away the refuse, carry in the raw materials, and display cultural progress and mechanical refinement. Boats can help illuminate the status of any given culture at specific points in the lineage of the society (Cook and Cook 2002:i).

Few, if any, shipwrecks can be examined in this way. But those that are found superimposed on a landscape, rather than embedded in a submerged landscape, can provide valuable views of the larger, surrounding countryside and of the peoples, communities, and industries associated with that landscape. The McDavid boat has been stripped of all identifying components. It could have been built and used anywhere within the 4,000-square-mile area of the river valley. It may have been introduced into the river system by flooding or by hurricanes and seasonal storms. Human activities such as logging, road building, dam construction, and dredging may have contributed to its position. Over the course of its movements within the
river system, a third of the hull has been torn away, while the remaining structures are worn and
decaying. In addition, no “supportive, or supplementary evidence” (Schlereth 1985:23) has been
found in local records, archives, or historical documents. The boat seems to remain apart from
local history, except in the general sense of knowing that communities and people used boats.

Without cargo remnants or knowledge of the vessel’s source or destination, inferences
about its importance as an indicator of social roles or strategies or its function in cultural
continuity can be only speculative at best (Ames 1985:103). The McDavid vessel is, however,
a tool. It is the product of human design, constructed for a specialized purpose. A boat implies
utilization of the river and can illustrate a community’s intentions, level of technology, financial
capacity, and strategies for organization and future development (Lewis 1985:41). Researchers
can observe the artifact and try to gain an understanding of how it “came to be, and what it
says about the people who created it” (Lewis 1985:40). Because the vessel is dilapidated, solid
connections to specific people or communities cannot be established.

The McDavid boat may be defined as a certain type of vessel, and its uses may be
outlined, but more detailed and specific information remains absent without associated artifacts.
Jonathan Adams speaks of wrecks as “time capsules,” referring to Lewis Binford’s use of the
phrase “a fine-grained assemblage, arriving at its wrecking site with an onboard stratigraphy”
(Adams 2002:297). A wreck carries with it a biography of past cargoes, the culture that sent it
out, the culture that awaited its arrival, and the day-to-day activities of its crew. Adams quotes
Keith Muckelroy’s view of boats as machines, elements in a system, and closed communities.
Adams also mentions John Gawronski’s concept of boats as symbols and floating ideologies,
displaying the needs and aspirations of a society (Adams 2002:300).

Jeanne Arnold (1995:733) discusses the control and manipulation of movements,
knowledge, and resources in addition to the use of specialized advantages by those who
owned boats. Such people interacted with the outside world, transported only what cargo and
information they chose, and rose to positions of wealth and prominence in their communities
by facilitating supply and demand. In modern times, these people became political figures such
as mayors, governors, and representatives (Gamble 2002:312). In these ways, the ownership of boats was instrumental in the shaping of a culture.

The McDavid boat was powered by an engine placing it in a period of approximately 1890 to 1910, a period when river communities were highly advanced and connected to one another by railroads and highways. Societies developed with the help of public education, newspapers, libraries, and regular interaction with neighboring communities. Boats no longer made those important links between people. By then, much of the earlier influence of boats as initiators of social change had largely disappeared. Boats of the size of the McDavid vessel were relegated to uses in industry, in small fishing operations, and as pleasure craft (Arnold 1995:733).

William Fleetwood states that by the 1930s “uncounted thousands of bateaux . . . were built by backyard carpenters as well as professional builders” (Fleetwood 1995:177). Unfortunately, records of small craft construction were not thought to be important, so little is known about the “small boatyards, or individual builders. . . . Historically significant small craft and the history of their construction is scattered. These statements reflect aspects of Florida’s maritime history, but were likely repeated across the country” (Wilkenson 1988:65).

As a tool of the local logging industry and perhaps essential to the operation of a lumber mill, the McDavid boat supports and promotes the success of that industry, thereby filling a role of a key ingredient for the growth and success of the river valley’s cultural and social evolution. The same thing can be said of the boat if it were used to transport cotton, naval stores, deer hides, or in modern times, peanuts and petroleum products. By helping small-scale industries mesh with large-scale industries, small craft helped preserve the balance of historical economies, facilitating international progress and interlocking world economic systems (Wallerstein 1989:145). The McDavid boat should be analyzed within its surrounding “maritime cultural landscape” (Westerdahl 1992:5), linking it to the activities and needs of its surrounding society. Boats not only transport the produce of a vast region, they also act as receivers of or repositories for region-wide cultural markers. Their influence reaches far beyond the shoreline, and in that sense, boats transported region-wide cultural ideologies to diverse foreign shores.
CHAPTER VIII
SUMMARY AND CONCLUSIONS

University of West Florida graduate students and field school students revisited the McDavid boat under the direction of Dr. John Bratten in early July 2013. The vessel remains in the slough where it was placed in the summer of 2011. At that time, it was approximately half filled with river sediments and presents about one foot of side hull structure proud of the river bottom. Measurements were taken of the engine mounting timbers, the prop housing timber, the stern hull planking, upper ends of the frames, and the remaining gunwale piece. The vessel is immovable without extensive excavation. None of the deck planking or the lower hull structures were exposed.

On 17 July 2013, Dr. Greg Cook led a second team of graduate students and field school students in conducting magnetometer and side-scan sonar surveys for approximately three-quarters of a mile north and south of the boat’s position. The focus of both surveys was the eastern riverbank area where the boat was discovered. It was thought that the missing bow section or the boat’s engine might have sunk to the river bottom and could therefore be recovered. However, neither survey provided additional targets.

No physical signs on the boat indicate that the engine, rudder, or propeller shaft and components were violently pulled from the boat, as would happen in a catastrophic wrecking event. Instead, all of the bolts, strapping, pins, reinforcing, and mounting hardware seem to have been removed from the vessel without causing any damage to wooden surfaces. There appears to be no shredding, splintering, or bruising on any of the bore hole shoulders, and for the most part, hull frame joints are still tight and intact. There are no broken-out or exploded areas associated with the mounting of the engine or power train components. Intact threads on the two motor mount pins are consistent with the theory that the vessel was purposely stripped and salvaged rather than being subjected to an accidental wrecking event. Images of the HYPACK computer scans are included in Appendix L (Side-Scan Sonar) Appendix and M (Magnetometer).
The McDavid boat was a small engine-powered vessel built with random-width planks. It displays a flat lower hull typical of shallow-water vessels and was approximately 25 to 30 feet long and approximately five to six feet wide at the midship frames. On each side, the side hulls were built using three planks, approximately one inch by ten inches. The planks were edge-mounted and nailed to the 2 x 4 frames using older cut nails and more modern drawn-wire nails. Without removing the boat from the water, surveyors could not determine the use of one type of nail below the water line and another type above the water line. The boat’s frames were built of paired 2 x 4 timbers across the bottom hull, spaced approximately two feet apart along the length of the craft. These paired frames mated with single 2 x 4 upright frames, projecting upward from each end of the bottom members. The three components formed an upside-down “U” figure that was 5 to 6 feet across, with legs approximately 2 feet long at each end. The bottom and side hull planks were nailed to these frames using the two types of nails mentioned above. The stern section was built of random-width planks, surrounding and supporting a large, solid timber through which a propeller shaft had been bored. A vertical rudder shaft was affixed to the final cross-member at the stern, and a rudder was attached to this shaft with bolts or with welds. Anchor points are visible along the final cross-member, where pulleys and/or pivot hardware was mounted, possibly communicating with a helm or other steering wheel or mechanism.

The engine was mounted upon two substantial timbers that were parallel to one another forward of the propeller-housing timber and secured on top of the frame members. Two iron engine-mounting bolts are still affixed to the timbers, one on each side, in such a position that they would have served to raise and lower the front of the engine in order to keep it in line with the propeller shaft. The careful maintenance of such an alignment prevents the production of harmful, wrenching vibrations which could destroy a boat by loosening hull seams and frame joints. Additional mounting points are visible along both timbers and would have matched bolt patterns on the engine itself, on an engine cradle, or on mounting framework. There are no remnants of the engine, the rudder, or the propeller components. The engine-mounting timbers
and their supporting timber frame were attached directly to the bottom hull frame of paired 2 x 4s. There is no evidence of any decking planks having existed beneath the engine.

A small deck section remains directly in front of the engine-mounting timbers. It is built with four one by tens, nailed directly to the top surfaces of the paired, lower hull frames. This structure provides a restricted deck area no more than 3 to 4 feet wide and no more than 6 to 8 feet long. Both the rear and forward edges of these decking planks are even and machine-cut. There is no evidence of damage to them. None of the boat’s structure remains forward of these deck planks. No other deck spaces were seen on the boat.

The uniform aging of the wood suggests that the engine and propeller systems were built into the boat as it was constructed, not added at a later date. The large timbers that supported the motor and housed the propeller shaft are foundation pieces of the craft. The main framing pieces and the stern hull planks are fitted to these timbers and are of the same age. All of the timber, both hull planking and frames, are weathered and discolored with age. A section of gunwale remains affixed to the upper ends of the side hull frames along the port side. It extends from frames near the stern to frames near the midship frames and is curved so that it depicts the shape of the hull. Using this curvature to envision the original shape of the hull suggests that the McDavid boat was built with a pointed bow atop a relatively flat bottom hull. The plan drawing depicts the boat’s structures (Appendix N).

Three wood samples taken from the boat were examined by Dr. Amy Mitchell-Cook. All three samples were southern yellow pine (*Pinus Sp.*), a species that has dominated the regional lumbering industry since Spanish Colonial times. Yellow pine was available throughout the Conecuh-Escambia River valley and could be obtained from small, family-operated sawmills, from the large commercial mills that blanketed the region, and from numerous lumberyards in every community. The randomness of the planks used in the boat’s construction, the mixture of nails used, the unconventional sizes of the lumber employed, and the simple, uncomplicated construction of joints, framing, and planking all contribute to an overall impression that the boat is a vernacular, or home-made craft. The random elements suggest that the boat was built without
a formal design or pattern, using scrap, salvaged, or culled lumber, rather than having been built in a commercial boatyard or shop.

Mr. Neal Collier of the Alger-Sullivan Historical Society in Century, Florida, reports that in 1910, the Toomer family operated a small sawmill at Bluff Springs, a site just upriver from McDavid. Similar small, family-owned mills are known to have operated at McDavid, Pine Barren, Mystic Springs, Flomaton, and Brewton. As previously noted, Mr. John Phillips researched and located approximately 70 historic mill sites in the river valley region. Some of these were powered by water wheels and continued in operation through the 1930s and the years of the Great Depression.

Documents found in early records of both the Avery-Ray Hardware Company of Pensacola, at the southern end of the river, and the Luttrell Hardware Company of Brewton, at the middle section of the river valley, show that both types of nails and a wide selection of hardware were available by the early 1900s. Products and services for steam engines and for a wide variety of gasoline engines were prominent in both communities by the turn of the century, and Pensacola City Directories from the late 1800s advertise steam engine supplies for sale at the Avery-Ray Hardware Company.

Fulton’s 1807 *North River Steamboat* (Dickinson 1971:238) provides a suitable marker for the introduction of steam-powered boats in the United States. The USS *Monitor*, engaged in Civil War combat in 1862, used a steam engine tethered to a propeller system. It also provides part of the chronology of the McDavid boat. By the mid-1850s, steam engine sales, service, and components were available in Pensacola hardware stores, and many lumber mills in the U.S. were converting to steam power by the 1840s-1850s. Commercial records of Escambia County reflect transactions involving sail-powered vessels throughout the 1800s, with no records of any engine-powered craft until early 1900. Accounting for lag-time in the spread and assimilation of steam technologies in Gulf shipyards, it is reasonable to state that if the McDavid boat was driven by a steam engine, it may have been built and operated in the late 1800s, from the immediate post-Civil War period of 1870 up to 1900.
Records from the above sources indicate that gasoline engines became common in the Pensacola area by the late 1890s. Automobile repair shops and dealerships began to flourish by 1910. Prior to that time, petroleum dealers in the Pensacola area advertised only lubricants, heating oil, and kerosene. Assigning a gasoline-fired engine to the McDavid boat moves its construction period more firmly into the 1900s or the very late 1890s.

The use of a propeller system on the McDavid boat also provides a view of the possible construction dates of the vessel. An early U.S. patent for marine propeller systems was awarded in 1849, and such systems were available in the marketplace by the 1860s (Weissenborn 1861:137). Reviews of lists of Florida’s shipyards, show that propeller systems were being built into local vessels by the late 1800s.

The small rubber hose installed on the starboard side of the vessel’s hull at the front of the engine could have provide an intake aperture, an exhaust aperture for a steam or gasoline engine, or a sump drain. Such rubber tubing has been available in the marketplace since the mid-1820s, and it proliferated during World War I. Synthetic heat-resistant rubber products have been employed on a world-wide basis since World War II. There is no way to tell if this component was included in the original construction of the McDavid boat or was added later, but the piece can be dated anywhere from the 1820s to the present.

Taken as a whole, the above-cited component histories serve to suggest more probable dates for the McDavid boat’s construction. The engine system and propeller system establish dates before which the boat could not have been built. A steam-powered boat would date from the 1860s to the present. A gasoline-powered boat would date from the very late 1890s, when small, internal-combustion engines became available. The general availability of gasoline around 1910 in the northwest Florida and south-central Alabama area suggests another timeline. Because there is no way to determine which system powered the boat, no actual construction or use date can be assigned. Assuming that the boat was a tool of the lumber industry encompasses both time periods and supports both power theories equally. As the lumber industry became more modernized, railroads and highway systems replaced Florida’s rivers as the primary
transportation avenues. As 20th-century American societies evolved into modern forms, small work boats became obsolete and were set aside, stripped of their usable hardware, and abandoned along the state’s rivers and bays, where their remnants can be found today.

Mr. Neal Collier provided a blueprint of a Canadian-made “Boom Boat” (Figure 20), a craft similar in size to the McDavid boat. The Boom Boat contains an internal engine mounted at an angle to its propeller shaft, which carries a small propeller and rudder assembly. The Boom Boat is flat-bottomed and provides minimal deck space forward of the engine. It was designed as a work boat capable of working in close proximity to boomed or rafted logs. Such a boat can be used to assemble log booms and to tow the booms on rivers.

![Figure 20. 1955 Canadian-built “Boom Boat.” (Courtesy of Collier and Fischer 1993.)](image-url)
The McDavid family operated saw mills in the Chumuckla area. They transported their supplies on the railroad from Pensacola to the village of McDavid and then operated ferry boats to carry items across the river (McMillan 1950a). Although there are no photos or records of these boats in local archives, boats of this size would have been suitable as ferries and as tow boats for barges. Whether used as a ferry, a boom boat, or a tow boat, the McDavid boat was likely used in such capacities during the late 1800s and early 1900s. The boat may have been a tool of the logging industry in the McDavid area. When it became obsolete or met with an accident, it was simply stripped and abandoned.

Today, the McDavid boat is submerged in a protected slough. When last visited, it was filled with mud and sand and had settled into the floor of the slough, where it is immovable without extensive excavation. The boat will be relatively safe, and it is hoped that future spring floods and storm waters will not damage it or force it out of the slough and into the main river.
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APPENDIX A

Photographs of the McDavid Boat as Found in June 2011
The following 12 photographs of the McDavid boat were taken by the Greenwell family in June 2011. The photographs are used by permission (Appendix O).

PICTURE 1. Stern view of the McDavid boat at the Mystic Springs boat landing.

PICTURE 2. View along the center line of the McDavid boat with the stern of the vessel at the bottom of the picture.
PICTURE 3. View of the port side looking over one of the pair of engine-mounting timbers.

PICTURE 4. View from the bow, along the port side hull planking and frame members.
PICTURE 5. View of the McDavid boat looking over the portion where the bow members would have been situated.

PICTURE 6. View of the engine mounting timbers taken from the small fore-deck area.
PICTURE 7. View of the engine mounting timbers and supporting framework.

PICTURE 8. View along the port side of the engine mounting section with the stanchion standing upright on the left side of the photo. This stanchion may have supported a roof structure over the engine and foredeck area.
PICTURE 9. View of the port-side hull frames and a section of the stanchion.
PICTURE 10. Full-length view of the McDavid boat looking from the bow towards the stern. Mr. Mark Greenwell (l) and Mr. Tom Greenwell (r) salvaged the vessel in June 2011
APPENDIX B

Photographs of the McDavid Boat as Surveyed in June 2011
The following 10 photographs were taken by UWF graduate student Mercedes Harrold as the team surveyed the McDavid boat at Mystic Springs in June 2011.

PICTURE 1. View of the stern area of the McDavid boat. The survey team is preparing to take a set of measurements offset from the center line tape.
PICTURE 2. View of the two timbers that make up the engine mount. The upright pins are engine mounting and adjustable leveling bolts.

PICTURE 3. View of the engine mount timbers from the starboard side showing the adjustable front motor mount pins. Note the slope of the upper surfaces allowing the engine to be tilted downward at the rear in order to align with the propeller assembly.
PICTURE 4. View from the stern as the survey crew adjusts the center line prior to running off-set measurements.

PICTURE 5. View beneath the stern showing the rear portion of the propeller mounting timber.
PICTURE 6. View from starboard to port across the mid-ships area incorporating the front of the two engine mount timbers, the stanchion laying across them, the engine mounting bolts, and the water inlet/outlet pipe in the deck in the center foreground.

PICTURE 7. View of the stern. Interior shot of the starboard side of the propeller support timber, several of the floor frames, and a short batten strip. The cut-out slot in the floor frame allows water to drain towards the hull pipe shown in picture 6.
PICTURE 8. Close-up view of one of the cut-outs along the engine mounting timbers. Bolts here secured the engine to the vessel.

PICTURE 9. View along the starboard side of a mounting timber showing a pair of notched-out recesses designed to accept additional engine hold-down bolts. The front-mounting engine adjuster pins and the top of the floor drain, water inlet/outlet pipe also appear in this view.
PICTURE 10. View of the front surface of the propeller mounting block showing the mouth of the propeller shaft hole which was bored through to the opposite end of the timber where the propeller was mounted. Recessed areas reflect the irons and fastening bolts used to secure the shaft, packing, and bearings, behind the engine.
APPENDIX C

1960 List of Old Lumber Mills Operating in the Region
The mills in this list are located in or close to the Escambia-Conecuh watershed system (McMillan 1963b).

<table>
<thead>
<tr>
<th>Mill</th>
<th>Location</th>
<th>Mill</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollard Mill Company</td>
<td>Pollard AL</td>
<td>Bay Point Mill Co</td>
<td>Bagdad FL</td>
</tr>
<tr>
<td>Lindsay Lumber Co</td>
<td>Pollard AL</td>
<td>J. R. Mims &amp; Co</td>
<td>Milton FL</td>
</tr>
<tr>
<td>E. Walker Co</td>
<td>Flomaton AL</td>
<td>Porter Lumber Co</td>
<td>Holt FL</td>
</tr>
<tr>
<td>Nadawah Lumber Co</td>
<td>Nadawah AL</td>
<td>Henderson-Waite Co</td>
<td>Caryville FL</td>
</tr>
<tr>
<td>Ivy Lumber Co</td>
<td>Beatrice AL</td>
<td>Harbison Co</td>
<td>DeFuniak FL</td>
</tr>
<tr>
<td>Manistee Lumber Co</td>
<td>Manistee AL</td>
<td>Bonifay Lumber</td>
<td>Bonifay FL</td>
</tr>
<tr>
<td>Savell &amp; Sanford</td>
<td>Wallace AL</td>
<td>Horse Shoe Lumber</td>
<td>River Fls. AL</td>
</tr>
<tr>
<td>Foshee Lumber Co</td>
<td>Foshee AL</td>
<td>Miller-Brent Lumber</td>
<td>Foley AL</td>
</tr>
<tr>
<td>W. N. Carney Mill</td>
<td>Atmore AL</td>
<td>Henderson-Waite Co</td>
<td>Sanford AL</td>
</tr>
<tr>
<td>Swift &amp; Hunter</td>
<td>Atmore AL</td>
<td>McGowin-Robbins Co</td>
<td>Samson AL</td>
</tr>
<tr>
<td>Lindsay Lumber Co</td>
<td>Morriston AL</td>
<td>Geneva Mill Co</td>
<td>Geneva AL</td>
</tr>
<tr>
<td>Dyas Lumber Co</td>
<td>Dyas AL</td>
<td>Blountstown Co</td>
<td>Blountstown AL</td>
</tr>
<tr>
<td>Nand Lumber Co</td>
<td>Dolive AL</td>
<td>Sanford Lumber Co</td>
<td>Freeport AL</td>
</tr>
<tr>
<td>Blacksher Co</td>
<td>Mobile AL</td>
<td>St. Andrews Lumber</td>
<td>Panama City FL</td>
</tr>
<tr>
<td>Bay City Lumber Co</td>
<td>Mobile AL</td>
<td>Harold Mill Co</td>
<td>Brewton AL</td>
</tr>
<tr>
<td>Jacobi Lumber Co</td>
<td>Molino FL</td>
<td>Lovelace Lumber Co</td>
<td>Brewton AL</td>
</tr>
<tr>
<td>McDavid Mill Co</td>
<td>McDavid FL</td>
<td>Peters Lumber Co</td>
<td>Brewton AL</td>
</tr>
<tr>
<td>McMillan Mill Co</td>
<td>Pine Barren FL</td>
<td>(name lost)</td>
<td>Noma AL</td>
</tr>
<tr>
<td>Southern States Lumber</td>
<td>Muskogee FL</td>
<td>(name lost)</td>
<td>Millville FL</td>
</tr>
<tr>
<td>Skinner Lumber Co</td>
<td>Pensacola FL</td>
<td>(name lost)</td>
<td>Millville FL</td>
</tr>
<tr>
<td>Simpson &amp; Co</td>
<td>Bagdad FL</td>
<td>Mendenhall Mill</td>
<td>Brewton AL</td>
</tr>
<tr>
<td>Bagdad Land &amp; Lumber</td>
<td>Bagdad FL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX D

1891 List of Old Saw Mills in the Escambia-Conecuh Watershed Area of South-Central Alabama
This list comes from what appears to have been a publication of some kind, perhaps a railroad journal (Waters 1973).

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Date?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blacksher-Miller Lumber Co.</td>
<td>Brewton</td>
<td>1884/1887</td>
<td>Rafted wood to Pensacola</td>
</tr>
<tr>
<td>Peters Lumber Co.</td>
<td>Brewton, 1 mile south</td>
<td>1883/1887</td>
<td>installed a planer in 1887</td>
</tr>
<tr>
<td>Harold Mill Co.</td>
<td>East of Brewton on the Conecuh</td>
<td>1874</td>
<td></td>
</tr>
<tr>
<td>Cedar Creek Mill Co.</td>
<td>4 mill sites. 2 near Brewton, on Cedar Creek which flows into Murder Creek.</td>
<td>1876/1911</td>
<td>[became the T. R. Miller Mill Co.] Water-powered.</td>
</tr>
<tr>
<td>Lovelace Brothers Lumber Co.</td>
<td>East of Brewton on the Conecuh River</td>
<td>1888</td>
<td></td>
</tr>
<tr>
<td>C. Y. Mayo Co.</td>
<td>On the Conecuh near Brewton</td>
<td>1871</td>
<td>water-powered</td>
</tr>
<tr>
<td>Escambia Lumber Co.</td>
<td>On the L&amp;N Railroad line 2 miles south of Pollard</td>
<td>1883</td>
<td>installed planers in 1886</td>
</tr>
<tr>
<td>Lindsey Mill</td>
<td>At Milltown, 5 miles east of Pollard</td>
<td>1874</td>
<td>water-powered</td>
</tr>
<tr>
<td>Pollard Mill Co.</td>
<td>On the L&amp;N Railroad at Pollard</td>
<td></td>
<td>water-powered</td>
</tr>
<tr>
<td>Parker and Lovelace Mills and Harrison Lumber Co.</td>
<td>15 miles east of Brewton</td>
<td></td>
<td>water-powered</td>
</tr>
<tr>
<td>Franklin Mill</td>
<td>6 miles south of Brewton</td>
<td>1890</td>
<td>steam-powered [20 hp]</td>
</tr>
<tr>
<td>G. B. Frierson</td>
<td>15 miles northeast of Brewton</td>
<td></td>
<td>water-powered</td>
</tr>
<tr>
<td>Sullivan Timber Co.</td>
<td>14 miles north of Flomaton</td>
<td>1880</td>
<td>planers and kilns installed in 1890; other mill sites included Wallace, Foshee, and at Magazine Point on the Alabama River</td>
</tr>
<tr>
<td>Wilson Lumber Co.</td>
<td>Near Wilson Station in southwest Escambia County, AL.</td>
<td>1887</td>
<td></td>
</tr>
</tbody>
</table>

OTHER MILLS (Wentworth 1940)
Cedar Creek Mill, 1848
Lindsey Mill (water) 1874
APPENDIX E

A Partial List of Water-Powered Mills and Related Sites

Near McDavid, Florida, as Discovered in the 1996 Survey, ROI #058
<table>
<thead>
<tr>
<th>Site</th>
<th>Location</th>
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<tbody>
<tr>
<td>8ES02279</td>
<td>Molino</td>
</tr>
<tr>
<td>8ES02276</td>
<td>Jacobi Lumber</td>
</tr>
<tr>
<td>8ES02268</td>
<td>McMillans - Pine Barren</td>
</tr>
<tr>
<td>8ES02296</td>
<td>Bogia</td>
</tr>
<tr>
<td>8ES02260</td>
<td>McDavid</td>
</tr>
<tr>
<td>8ES02263</td>
<td>McDavid</td>
</tr>
<tr>
<td>8ES02281</td>
<td>McDavid</td>
</tr>
<tr>
<td>8ES02275</td>
<td>Stanton’s- Bluff Springs</td>
</tr>
<tr>
<td>8ES02266</td>
<td>Bluff Springs</td>
</tr>
<tr>
<td>8ES02274</td>
<td>Martin’s- Century</td>
</tr>
<tr>
<td>8SR01379</td>
<td>McDavid Bros./Skinner</td>
</tr>
<tr>
<td>8SR01377</td>
<td>Mystic Springs</td>
</tr>
<tr>
<td>8SR01376</td>
<td>Jay</td>
</tr>
</tbody>
</table>

(Phillips 1996)
Hand-drawn map of the sites identified by Mr. John Phillips of the University of West Florida’s Archaeology Institute in his 1996 survey and report. The circled area shows the cluster of water-powered mill and related sites at McDavid, FL. (Phillips 1996:114. Emphasis added by author, 2012.)
APPENDIX F

West Coast Naval Stores Company 1899 Incorporation Papers
These incorporation papers illustrate the corporation’s intention to both use and build watercraft of many sizes. (ECF 1899:1.175. Emphasis added by author, 2012.)
APPENDIX G

River Surveys Completed in April 2012 and February 2013
River Survey 1. 24 April 2012. Observations at selected tributary sites along the lower Conecuh-Escambia River system.

<table>
<thead>
<tr>
<th>SITE</th>
<th>NEAR</th>
<th>NORTHING</th>
<th>EASTING</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chestnut</td>
<td>Molino</td>
<td>16R0465715</td>
<td>3398247</td>
<td>sm. bridge, dry</td>
</tr>
<tr>
<td>Chestnut</td>
<td>Molino</td>
<td>16R0465343</td>
<td>3398922</td>
<td>roadside gully, dry</td>
</tr>
<tr>
<td>Molino Rd. East</td>
<td>Molino</td>
<td>16R0467416</td>
<td>3398103</td>
<td>sm. bridge, cement chutes, dry</td>
</tr>
<tr>
<td>Schaag Rd.</td>
<td>Molino</td>
<td>16R0467512</td>
<td>3396871</td>
<td>med. bridge, plugged treefalls, shallow</td>
</tr>
<tr>
<td>Schagg Rd.</td>
<td>Molino</td>
<td>16R0467243</td>
<td>3404587</td>
<td>as above</td>
</tr>
<tr>
<td>Barth</td>
<td>Hwy. 29</td>
<td>16R0467604</td>
<td>3404587</td>
<td>navigable</td>
</tr>
<tr>
<td>Cotton Lk Camping</td>
<td>Barth</td>
<td>16R0469983</td>
<td>3405505</td>
<td>navigable</td>
</tr>
<tr>
<td>McDavid Mill</td>
<td>McDavid</td>
<td>16R0467049</td>
<td>3406896</td>
<td>ditch</td>
</tr>
<tr>
<td>Mystic Springs</td>
<td>McDavid</td>
<td>16R0470250</td>
<td>3413375</td>
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<td>Courtney &amp; RR</td>
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<td>Salters Lk Rd.</td>
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<td>3424485</td>
<td>no access</td>
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<tr>
<td>Escambia</td>
<td>Salters Lk Rd.</td>
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<td>3426397</td>
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<td>Century</td>
<td>16R0477533</td>
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<td>Century</td>
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<td>Terrell Landing</td>
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<td>Escambia</td>
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<td>3409694</td>
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<td>Sandy Landing</td>
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<td>Sardis Church</td>
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River Survey 2. 18 February 2013. Observations at selected sites near the headwaters of major tributaries of the Escambia-Conecuh River system.

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<th>NORTHING</th>
<th>EASTING</th>
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<td>Hank Wms. &amp; Co. 8</td>
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<td>South of Brantley, AL</td>
<td>16R0556499</td>
<td>3495613</td>
<td>2 pictures at gauge, full, deep, in woods</td>
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</tr>
<tr>
<td>Patsaliga</td>
<td>Middle</td>
<td>Luverne AL</td>
<td>16R0568393</td>
<td>3509907</td>
<td>2 pictures, full, deep</td>
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<tr>
<td>Conecuh</td>
<td>Upper</td>
<td>Troy, AL</td>
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<td>3518928</td>
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<tr>
<td>Conecuh</td>
<td>Head</td>
<td>North of Troy, AL</td>
<td>16R0611397</td>
<td>3535134</td>
<td>3 pictures, full, over banks into woods</td>
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<tr>
<td>Conecuh</td>
<td>Head</td>
<td>Union Sprgs.</td>
<td>16S0621343</td>
<td>3555090</td>
<td>1 picture, minor</td>
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</table>

Survey results. 18 February 2013. Data points and observations near the headwaters of the major tributaries of the Escambia-Conecuh watershed area in south-central Alabama. These data were taken at the usual seasonal high water period and illustrate the upper range of potential operation of the McDavid boat.
APPENDIX H

Hand-drawn Maps of the Conecuh-Escambia Watershed System Showing
Estimated Range of the McDavid Boat in High and Low Water Conditions
DRAWING 1. An illustration of the Conecuh-Escambia watershed area of northwestern Florida and southwestern Alabama with approximately 90% of the area navigable during the high-water, winter-spring period. (Drawing by author, 2012.)
DRAWING 2. An illustration of the Escambia-Conceuh watershed area showing approximately 60% of its area navigable in the low-water, summer-fall period. (Drawing by author, 2012.)
APPENDIX I

Late Winter Photographs of Moderate River Levels in Headwater Areas
The following eight photographs were taken by the author on 2 February 2012.

PICTURE 1. Grissett Bridge, Upper Big Escambia Creek, Alabama.

PICTURE 2. Grissett Bridge, Upper Big Escambia Creek, Alabama. At center span, approximately 67 feet wide and two feet deep.
PICTURE 3. Robbinsville Bridge, Big Escambia Creek, Alabama.

PICTURE 4. Burnt Corn Creek at Appleton Road and County Road 77, Brewton, Alabama.
PICTURE 5. Murder Creek, East Brewton, Alabama.

PICTURE 7. Patsalica River, Gantt Lake, Alabama.

PICTURE 8. Gantt Lake, Middle Conecuh River, North of Andalusia, Alabama.
APPENDIX J

Early Summer Photographs of Receding River Levels in Headwater Areas
The following seven photographs were taken by the author on 1 April 2012.

PICTURE 1. Pigeon River 18 miles east of I-65 on Highway 106. Rapids, 30-35 feet wide, two feet to six inches at bridge. Not navigable at this point.

PICTURE 2. Patsilaga River, Highway 106 east of Georgianna, just before the junction at Highway 77, 50 to 60 feet wide, slow, adequate depth.
PICTURE 3. Conecuh River at Brantley, Highway 331, 100 feet wide, good current, good depth, guage station.

PICTURE 4. Patsilaga at Luverne, 75 feet wide, two feet deep, slow but appears adequate for navigation.
PICTURE 5. Conecuh River just east of Glenwood on Highway 6, two feet deep, 40 to 50 feet wide, slow current, appears adequate.

PICTURE 6. Conecuh River east of Goshen on Highway 2262, 40 feet wide, four to five feet deep, slow current, appears adequate for navigation.
PICTURE 7. Conocuh River head, Union Springs.
APPENDIX K

Spring Photographs of High Water Levels in Headwater Areas
The following six photographs were taken by the author on 17 February 2013.

PICTURE 1. Patsaliga River: 16R 0556499 / 3495613, from crossing and guage station, Alabama State Highway 106.

PICTURE 2. Patsaliga River, Site 2, 16R 0568393 / 3509907, from crossing of US 29 and Alabama 10 west of Luverne, Alabama.
PICTURE 3. Conecuh River, Site 2, 16R 0595067 / 3523371, west of Troy, Alabama, at crossing of US 29 and Alabama 10; view northwest.

PICTURE 4. Conecuh River, Site 4, 16R 0611397 / 3535134, from crossing of Alabama 223, northeast of Troy, Alabama; view is north.
PICTURE 5. Conecuh River, Site 4, View 3, from roadside in Union Springs, Alabama, along U.S. 29 South / Alabama 239 South. This view is almost the origin, not more than four feet wide and six to eight inches deep.

PICTURE 6. Sepulga River, near Garland, Alabama, 16R 0517167 / 3490564 UTM; flooded into the woods and well out of its banks. Local resident said it had been over the bridge the prior week and would probably rise above it again. Current is strong.
APPENDIX L

Side-Scan Sonar Images Taken 17 July 2013
Images 1 through 4 show approximately a 3/4-mile section of the Escambia River’s east bank, where the McDavid boat was found. Images 5 and 6 show the central 1/3 mile of the river bed directly opposite the boat’s original location. These last two images show the deeper portion of the river bed towards the west bank.
### VLT 66 Left

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### VLT 66 Left

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N 30°51.365'  W 087°18.582'
N 30°51.307'  W 087°18.604'
APPENDIX M

Magnetometer Surveys of the McDavid Site Taken 23 July 2013
APPENDIX N

McDavid Boat Site Plan Drawn by Author, 2014
APPENDIX O

Copyright Permission Letters
Cindy Greenwell
4741 Greenwell Rd
Century, FL 32535

July 23, 2015

To Whom It May Concern:

Mr. Robert Rutledge, with the UWF Anthropology program, has my permission to use any photos that I took of the old boat on the McDavid Florida River. He may use these photos for whatever his needs are in regard to his Thesis.

If you have any questions or concerns, please free to contact me.

Sunflowermom1978@yahoo.com
850-380-8975

Thank You,

Cindy Greenwell
Hi Bob:

Per our phone conversation, you have permission to use the photo of the marine engine that was posted on the club’s forum. Also, if there are any other photos that would help you, please feel free to use them.

If possible, the Model T Ford Club of America would appreciate credit for the photo.

Regards,
Jay Klehfoth

Jay Klehfoth
CEO: Model T Ford Club of America
Editor: Vintage Ford
119 W. Main Street
PO Box 126
Centerville, IN 47330

765-855-5248
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Type/print name: Jan Edwards

Date: 9/11/14
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3251 South Pine Barren Road
McDavid, Florida 32568

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Picture: Turpentine Mill at Munson, Fl
Blueprint: Canadian-built "Boom Boat" plans.

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Sincerely,

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Signature: [Signature]
Type/print name: Jerry O. Fischer
Date: 11-10-14