LOGBOATS OF THE SOUTHEASTERN UNITED STATES: INVESTIGATING THE QUESTION OF FORM

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ABSTRACT

Jessica Lee Curci. LOGBOATS OF THE SOUTHEASTERN UNITED STATES: INVESTIGATING THE QUESTION OF FORM. (Under the direction of Dr. Charles Ewen) Department of Coastal Resources Management, May 2006.

This investigation is a general study of logboat forms in Eastern North America, with particular attention to southeastern United States. While scholars have studied logboats for years, very little is known about the factors that determine their form. Past research of logboats has focused on their cultural or geographic significance, rather than their environment. This research tests if logboat forms are dependent on the environment in which they are built. This means that the form of the canoe relies on the available material, the size, type, and shape of the available trees. Additionally, the investigation revisits the issue of reburial at Lake Phelps, NC and determines if the management of the cultural resource through reburial has been successful.

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CHAPTER 1-INTRODUCTION

Logboats

Logboats are ubiquitous forms of water transport. They are found throughout the world in virtually every inhabited place with access to a waterway. Basil Greenhill (1995:101) suggests that logboats are the basis for the majority of global boat types. The development of other ancient boats, such as reed boats, skin boats, and bark boats (including the umiak and kayak types which are still in use) are limited by the availability of the raw material (Greenhill and Morrison 1995:101). Multiple authors state that the development of the modern plank boat stems from increasing the freeboard of a logboat by adding washstrakes or enlarging the vessel itself by joining two logboat hulls together (Johnstone 1980; McKee 1983; Fleetwood 1995; Greenhill and Morrison 1995). Although the above-mentioned umiak and kayak, as well as some forms of curragh and coracle in Ireland, are still presently in use, builders have been forced to modify the vessel's material components. Boaters still use bark and skin boats of the past but the vessels are now made of canvas and fiberglass in modern canoes and kayaks.

Logboats are important to understand as a part of the historical development of nations and population spread as well as vessel development and history. The use of logboats allowed people to explore further reaches of their land, and move over large distances with less trouble and time than moving over land. This is particularly the case in the southeastern United States where much of the coastal land is swamp and tidal marsh. Before horses became widespread in the 18th century, the logboat was the most reliable method of transport and a valuable possession (Fleetwood 1995:5; Pittman

1970:4). It also allowed inhabitants of the Caribbean islands and Bahamas to travel between islands over open seas (Fleetwood 1995:2).

In addition to ease of movement and transport, the use of the logboat made available a wider range of food sources. In northwestern North America, Native Americans used logboats to fish in the open ocean, specifically for whales and other marine mammals (Drucker 1951:16, 28, 36-37; Kirk 1986:133, 136-138, 169). The use of logboats also allowed users to reach deeper portions of lakes, thereby expanding the amount and types of lacustrine foodstuffs. Reliable water transport also facilitated tribal warfare, since even small vessels, such as logboats, could provide transport for people seeking combat with other tribes. Most coastal Native American tribes lived on different islands or sections of land that were accessible by water transport. This would lead one to believe that warfare was more likely to be initiated by raiders over the water, not land (Pittman 1970:4).

Logboats, or dugout canoes, are boats that are constructed from one single log. Technically, these vessels should be termed logboats, because the word "logboat" refers to a boat created from one log using a variety of methods. The term "dugout canoe" refers to a boat that is created from one log using only hand tools, such as stone or iron implements, to mechanically remove wood and shape the interior of the vessel. In the United States, researchers usually call boats made of one log "dugout canoes." This is not always accurate, especially in the case of Native American-made vessels. These boats are created using fire to expand, shape, and remove material from the inside of the boat (McGrail 1978; Arnold 1995; Okorokov 1999). While fire technically is a "hand tool," it is not the same type of physical tool such as an adze and is therefore regarded as a separate process. Based on the definitions above, the use of fire to create a single-log boat makes it a logboat instead of dugout canoe. Sean McGrail (1978) states that this type of vessel should be called either "logboat" or "dugout logboat" because logboats have very little in common with true canoes.

A true canoe in strict nautical terms refers to a vessel shape that has rounded ends in all three planes, a tapered body, and a rounded transverse section (McGrail 1978:130). The term canoe has also been used in nautical circles to describe birch bark canoes and modern racing canoes that differ greatly from the "dugout canoe" discussed here (McGrail 1978:2). Beat Arnold (1995) refers to logboats as monoxyles dugouts, referring to the fact that the vessels are made from one log.

In the field, logboats are often mistaken for an object that looks like a cultural artifact but is actually formed by natural processes such as decomposition, erosion, and abrasion. Animal troughs are also commonly mistaken for logboats and farmers often use logboats as animal troughs when found abandoned. McGrail (1978) and Mowat (1996) suggest that a suspected logboat can be accepted as an actual logboat if the item satisfies two or more of the following:

1. it is found in or near a current or former waterway
2. it is associated with other nautical artifacts, such as fishing tackle, anchors, paddles, poles, or harbor remnants
3. at least one end of the item is shaped in one of the well-documented logboat forms
4. it has current or vestigial fittings which are appropriate to logboats, such as thwarts, thole-pins (or oarlock, the piece of wood on the gunwale that holds the oar in position), ribs, stabilizers, seats, or gauge holes
5. it measures more than about three meters (nine feet) in length

6. the bark and sapwood have been removed (McGrail 1978:19, 93; Mowat 1996:1)

These criteria are based on McGrail and Mowat's experiences with logboats from England, Wales, and Scotland. In terms of American logboats, most of the criteria also apply, however, criteria two, three, and five are not always reliable. Often, when locating logboats in the field, the vessels are not always associated with any type of maritime artifacts. Logboats are also not always found as a complete vessel and some are lacking both ends or the visible end is not easily distinguishable as either an artifact or something created by natural processes. Due to the fragmentary nature of some logboats found in the United States, the length can be less than nine feet (three meters).

Globally, logboats span a long chronological range and the southeast United States is no exception. Identified logboats range from prehistoric (Middle Archaic) to historic time-periods and researchers document the use of logboats in the mid-20th century. Native Americans used logboats for hunting and fishing as well as for transport. Sometimes, Native Americans inhabiting a seasonal encampment would sink their logboats for storage over the winter until they were needed the next season (Fleetwood 1995; Phelps 1989). Logboats were used in the southeast by Native Americans, colonists, and recent historic fishermen for general work and subsistence practices.

European colonists arriving in North America observed many examples of Native American logboat use (Fleetwood 1995:4-9; Hartmann 1996:3; Pittman 1970:53-54). Christopher Columbus, in his journals on Saturday, October 13, 1492, wrote:

> They came to the ships in boats, which are made of a tree-trunk like a long boat and all of one piece. They are very wonderfully carved, considering the country, and large, so

> that in some, forty or forty-five men came. Others are smaller, so that in some only a solitary man came. They row them with a paddle, like a baker's peel, and they travel wonderfully fast. If one capsizes, all at once they begin to swim and right it, bailing it out with gourds which they carry with them (Fleetwood 1995:1; Hartmann 1996:3).

Hernando de Soto, while traveling northward from Florida in 1540, encountered Native American logboats. In South Carolina:

> As the governor [de Soto] arrived, four canoes came toward him...after a little time the Cacica [chieftess] came out of the town, seated in a chair, which some principal men having borne to the bank, she entered a canoe. Over the stern was spread an awning, and in the bottom lay extended a mat where there were two cushions, one above the other, upon which she sat, and she was accompanied by her chief men, in other canoes (Fleetwood 1995:4).

Father Andrés de San Miguel, living among Native Americans near St. Augustine in 1595, recorded in his *Narrative of the Hardships Suffered by the People of the Ship* Our Lady of Mercy:

> [the] piragua of Indians with things to barter; all carried as many people as could fit, and all rowed standing with some long paddles two varas in length [Fleetwood notes a vara was the Spanish yard, which equals about 32.8 inches], the blades one-sixth of a vara in width and one-half of a vara long, the shaft like a lance all well made from a piece of strong wood (Fleetwood 1995:5).

Philip Georg Friedrich von Reck, while traveling by logboat on the Savannah River in 1736, wrote:

> A canoe is an Indian boat chopped out of a thick and long tree. The bottom is left about three inches thick and the sides are left two inches thick near bottom and one and a half at the top. Not more than three or four people can sit in a canoe, and they cannot move at all without capsizing the canoe (Fleetwood 1995:5).

In 1588 Thomas Harriot wrote in his narrative, "*A Brief and True Report Of The New Found Land Of Virginia,*"

> The manner of makinge their boats in Virginia is very wonderfull. For wheras they want Instruments of yorn [iron], or other like vuto ours, yet they knowehow to make them as handsomely, to saile with whear they liste in their Riuers, and to fishe with all, as ours. First they choose some longe, and thike tree, accordinge to the bignes of the boate which they would frame, and make a fyre on the grownd abowt the Roote therfo, kindlinge the same by little, and little with drie mosse of trees, and chipps of woode that the flame should not mounte opp to highe, and burne to much of the lengte of the tree. When yt is almost burnt through, and readye to fall they make a new fyre, which they suffer to burne vuntill the tree fall of yt owne accord. ...They then raise yt vppon potes laid ouer cross wise vppon forked posts, at suche a reasonable heighte as they may handsomlye worke vppo yt. Then take them of the barke with certayne shells: thy reserue the, inerrmost parte of the lennke, for the nethermost parte of the boate. On the other side they make a fyre accordinge to the length of the bodye of the tree, sauing at both endes. That which they thinke is sufficientlye burned they quenche and scrape away with shells, and makinge a new fyre they burne yt agayne, and foe they continne somtymes burninge and sometimes scrapinge, vntill the boate have sufficient bothowmes. This god indueth thise sauage people with sufficient reason to make things necessaaire to serue their turnes (Harriot 1588; Pittman 1970:53-54; Swanton 1946).

Arthur Barlowe, in a reconnaissance report from 1584, wrote:

> Their boates are made of one tree, either of Pine, or of Pitch trees: a wood not commonly knowen to our people, nor found growing in England. They have no edge tooles to make them withall...they burne downe some great tree, or take such as are winde fallen, and putting myrrhe [sic], and rosen upon one side thereof, they sette fire into it, and when it hath burnt it hollowe, they cutte out the coale with their shels, and ever where they would burne it deeper or wider, they laye on their

> hummes, which burneth away the timber, and by this meanes they fashion very fine boates, and such as will transport twentie men (Pittman 1970:53; Swanton 1946).

European colonists did not merely observe logboats; they brought their own logboat-making traditions with them. The forms of colonial logboats are sometimes different from Native American logboats and some unidentified logboats are hybrids of both Native and European influences. Native American logboats tend to follow a U-shaped or C-shaped cross section with a flat keel line and follow the shape of the parent log. European logboats tend to have different forms, with the V-shaped cross section in addition to the U-shaped and C-shaped hull forms. These logboats can vary from the shape of the parent log because boat builders use metal tools to construct the vessel in the dugout fashion (Alford 2005; Lawrence 2004). More recent logboats of the historic and modern period, used primarily for fishing and oystering, include modifications pertinent to the intended activity. Some have additional modifications, such as seats and foot braces, as well as places for removable seats, mooring line holes, and rubbing strips. More recent examples of logboats include modifying the single log type by fastening two logboat hulls together with a center plank and adding stabilizers across the center of the hull (Fleetwood 1995).

This investigation is limited in that only inland logboats are considered. Ocean-going logboats are fundamentally different from inland ones. Ocean-going craft can be from twice to ten times the size of inland logboats and are often used under sail and over long distances for exploration, hunting, trade, and warfare. Historic documents allude to parties of Native Americans on the ocean in large logboats under sail. In Northwestern

North America, including what is now Alaska, Western British Columbia, Washington, Oregon, and northern California, Native Americans regularly used logboats for whale hunting, as well as, warfare and trade between different tribes (Ames and Maschner 1999:111; Croes 1995:1, 81; Kirk 1986:169; Matson and Coupland 1995:264, 266). Northwestern Native Americans shaped and decorated their logboats bows to represent different animal gods. The inland logboats discussed here were used mainly for fishing, but also saw use in riverine transport and trade and to a lesser extent in warfare. Unlike its oceangoing counterpart, the inland logboats is rarely decorated, and if they are decorated, they do not usually represent any deity. Fishermen often paint more modern inland logboats to resist weathering, but the-single color applied to the outside of the hull is a protective coating, not decorative (due to the lack of artistic representation in the painting).

Researchers focusing on smaller vessels tend to stay away from logboats in general because they are almost impossible to date without laboratory tests and the prevailing thought on logboats is that "if you have seen one, you have seen them all." Archaeologists have conducted examinations of logboats in Britain, including extensive catalogs of logboats found throughout England, Wales (McGrail 1978; Marsden 1989), Scotland (Mowat 1996), and Northern Ireland (Fry 2000). Researchers from other areas of Europe have also published information on local logboats (Arnold 1995; Okorokov 1995; Ossowski 1999), however, this same level of analysis has not been extended worldwide. Considering these vessels are used and found throughout the world, there is a dearth of research on this type of watercraft.

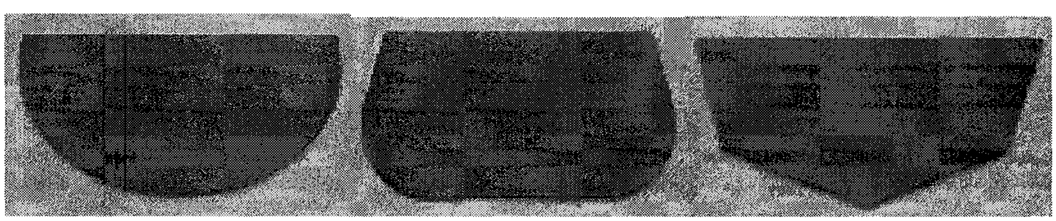
North American researchers have investigated and published on oceangoing logboats more than inland logboats. This may be due to the quality of the site in which the logboats are found, or the ease of excavation and preservation, or the context associated with the logboats. For example, the Ozette site, in Washington state, included numerous oceangoing logboats, but the site also revealed multiple types of artifacts relating to Native American life. The Ozette site was buried under a mudslide, which facilitated the preservation of otherwise perishable artifacts (Ames and Maschner 1999:111). Archaeologists and landowners usually discover inland dugouts in solitary finds, although some have been found in large caches (Hartmann 1996:3; Phelps 1989; Wheeler, et al 2003). Researchers tend to cursorily document singular finds and give more attention to finds involving large numbers of logboats in one site. Many logboat researchers tend to focus on the logboat, the context of the vessel, and how the boat relates to the larger associated ethnic group (Hartmann 1996:2-3).

There are only a limited number of available publications concerning in-depth research on inland logboats and so, this type of vessel is in need of more in-depth research. Archaeologists find inland logboats throughout North America, particularly in the Southeastern United States. Concentrations in the southeast may be due to the region's geography. River channels, streams, creeks, tidal currents, sounds, and lakes connect different sections of this large area. These coastal and inland waterways, which encompassed many narrow streams and channels, were only navigable by small craft, such as the logboat (Fleetwood 1995; Hartmann 1996:2). Because of their widespread distribution, inland logboats should be investigated as a whole collection, focused on the vessels themselves, instead of a subset of a larger community.

Hypotheses

There are two different hypotheses being tested in this investigation. The first is that the environment or available materials determine the form of the logboat. This will be tested by first compiling a database of logboats primarily for Southeastern United States, but with additional data from Eastern North America, then by recording the shape of the hull, the shape of the ends, any surviving decoration, any anomalies or additional modifications, and measuring the logboats in detail.

The qualitative data (the physical structure and appearance of the logboat) is used to determine the morphology of the logboat, according to the characteristics. His morphology codes for hull structure are canoe form, punt/barge form, dissimilar-ended form, and box form. Additional morphological data are hull shape (U-shaped, C-shaped, V-shaped, and squared off U-shaped), keel line (flat, rocker, slight uplift, and raked), and the shape of the sides (concave, straight, or flared). These shapes are shown in figure 1.



C-shaped U-shaped Modified V-shaped.
Figure 1. Logboat cross-sections

The archaeological analysis will distinguish morphological groups among North American logboats. This will determine whether change in chronology, geography, ethnicity, materials, or construction has an effect on the morphology of the logboat. By controlling for chronology, it is also possible to test whether the change in form occurs over time. The statistically testable questions are:

1. Does the environment or available materials determine the form of the logboat?
2. Do different boat-building traditions and ethnicity affect the form of the logboat?
3. Does function or handling capability affect the form of the logboat?
4. Do modifications over time affect the form of the logboat?
5. Does geographical distribution affect the form of the logboat?

Alternate Hypotheses

If the current research finds that the environment does not affect the form of the logboat, there are two alternate hypotheses. The first alternative hypothesis is that different boat-building traditions affect the form of the logboat. Observing the geographic distribution of logboat forms can test this hypothesis and realize any correlation between geographic and cultural distributions and different logboat forms. The second alternative hypothesis is that possible function/handling capability affects the form of the logboat. This hypothesis can be tested using McGrail (1978) functional and handling equations compared with the logboat form.

The second hypothesis attempts to answer the question of management of logboats. The main question: can you employ reburial as an effective method of preservation and conservation? While the ruling thought is that, if a museum will not take logboat finds, reburying them in their environment will promote their survival into the future; however, this may not be the best management option in the end. Secondary management questions are:

1. Do archaeologists find logboats in certain places because communities only used them in that area or because the logboats were preserved only in that particular area?
2. How is preservation affected by time (i.e. are the "younger" logboats better preserved than the "older" ones)?
3. How does the location of logboat finds compare to ethno-historical accounts of logboat use?
4. Is reburial an effective method of preservation and conservation?

As a cultural resource, archaeologists and museum personnel have managed logboats very differently over time and location. The differing preservation and management of three large caches of logboats—Lake Phelps, North Carolina, various logboats from South Carolina, and various logboats from Georgia—are considered in this investigation. The issue at hand is what to do with these logboats when they are found—their conservation and curation are difficult and time and space consuming, especially when found in large numbers. Thus, management of logboats often defaults to *in situ* or natural preservation.

Lake Phelps, in particular, represents an interesting case study because only five of the 28 vessels were removed, conserved, and curated. The other 23 logboats were recorded by archaeologists and reburied *in situ*. Uncovering portions of the reburied Lake Phelps logboats and recording their preservation state provides a comparison against the logboats that the state Underwater Archaeology Branch (UAB) office removed and conserved. In recording the current preservation of the reburied logboats in Lake Phelps, investigators can ascertain the efficacy of reburial; in this case by comparing the current preservation to the condition of the logboats at the initial discovery (through photographs taken during the initial investigation).

Management and Preservation

The knowledge of our prehistoric past comes from archaeological investigations, which uncover the remains left behind by past societies. Without archaeology, our knowledge and understanding of past and present cultures would be vastly different from what we recognize today. Unfortunately, the past inhabitants of various lands and cultures did not tidily preserve their tools, art, textiles, and other important artifacts for simple unearthing and investigation—archaeologists must actively search out archaeological sites, on land and under water, and then painstakingly record and conserve objects to understand their full potential.

Archaeological excavations are often expensive in terms of money, time, and personnel; the maintenance of recovered artifacts adds a decided expense to any investigation. In order for other archaeologists and the public to reap the benefits of studying these artifacts, they must be conserved, curated, or displayed in a suitable environment. Although this process may seem straightforward, the conservation, management, and exhibition process are often long and quite costly. This is especially true in the case of waterlogged archaeological remains. The artifacts recovered must be conserved, either passively or actively, almost immediately because if left to dry out, the object will be destroyed, rendering further study or identification impossible.

CHAPTER 2-BACKGROUND

Reburial Background

Conservation techniques. Intrinsic to any archaeological investigation is conservation, and in order to carry out any method of conservation, the archaeologist must devise a conservation plan with a conservator. Wendy Robinson (1998:15) suggests the following practical considerations in order for the conservation operations to run smoothly:

1. A list of predicted finds and materials from which they are made
2. A policy on backfilling or conservation *in situ*
3. Arrangements for the long-term housing of the finds
4. Arrangements for conservation and a contract with a conservation laboratory
5. A conservation budget and how this will be financed
6. Arrangements for scientific dating or analysis of finds and which procedures to follow
7. Arrangements for x-ray and conventional photography
8. The priority of the finds, putting those that need urgent treatment ahead of others
9. Arrangements for transportation of finds to the first-aid workshop
10. Procedures for recording first-aid treatments
11. The treatment, storage, and packaging of finds
12. Arrangements for transportation and delivery to the conservation laboratory

In general, conservation efforts tend to require a large amount of funding in order to preserve the artifact successfully. These conservation techniques however, are not uniformly costly, and certainly, some forms of conservation are more or less time and energy intensive and more or less cost efficient than other conservation techniques. The directing archaeologist and lead conservator in any investigation must weigh these conservation options and choose which ones will most effectively suit the complex needs of the artifacts likely to be uncovered. However, once the artifacts are found, if they are in worse shape than originally thought, the conservation plan and team must be flexible and knowledgeable enough to modify the plans accordingly. Conservation techniques can be grouped into two categories—passive conservation and active conservation. While the terms used may be deceiving, passive conservation does not indicate that the objects being conserved are treated once and then forgotten about. The same principle applies conversely—just as passive conservation does not mean neglecting artifacts, active conservation does not indicate that the conservator will be watching over the actively conserved objects 24 hours a day, 7 days a week. The terms refer to the methods in which the conservation treatments react with the artifact itself.

Active conservation methods are sometimes expensive or unavailable and many times museums are unable or unwilling to display artifacts, the material recovered during archaeological excavation must be reburied, conserved *in situ*, or left in the natural environment. Although it may be more convenient in the short-term, to leave the material to nature (and probably deterioration) after it has been fully recorded, drawn, and photographed, presents a problem to future archaeologists desiring to study that same material. Certain details of archaeological materials will seem important to one specialist, while another specialist may be interested in a completely different detail that the first specialist did not notice or record. These biases must be realized by the principle investigator of the excavation and future archaeologists must not be discounted from studying these artifacts. In addition, years from now, the orientation of archaeological study may change and a particular artifact may need additional study to answer new questions that have arisen about the past.

Active conservation techniques for waterlogged materials usually include replacing the water content of the artifact with a stabilizing agent or material that aids in the retention of the dimensions of the artifact during drying and preventing collapse during drying. Additionally, the impregnation medium should be able to be extracted from the artifact, so if more effective techniques of conservation are developed in the future, the current process can be reversed. Active conservation for waterlogged artifacts, such as wood, include replacing the water with a liquid substance that will solidify upon drying, such as polyethylene glycol (PEG), alum, acetone-rosin, and sucrose. Technically, PEG treatments are reversible but the process is not quite as straightforward as the application. Another water replacement method utilizes a liquid with a low surface tension that can be allowed to evaporate while preventing the collapse of the structure of the artifact—such liquids include alcohol ether resin and all freeze drying techniques (Gregson, 1977). The two most common forms of conservation of wood are with PEG or sucrose bulking and impregnation. There is a significant cost difference between the two methods. The price of PEG is tied to the price of oil, and therefore fluctuates. The latest price quote (as of 4/5/2006 from BASF) for a 50 gallon drum is \$600 plus shipping, or \$1.49/lb, if you buy the drums in bulk (an order of 17 drums or more). For one drum, the price is around \$4.00/lb plus shipping. The cost of sucrose, or refined table sugar, ranges from \$0.30/lb-\$0.50/lb depending on the area and specific grocery store chain. In addition to the cost of the materials, the cost of building a tank and obtaining de-ionized or distilled water for the treatments would need to be factored in. Also, the man-hour cost of hiring a professional conservator for the duration of the treatment, which could be anywhere from 18 to 24 months, at a general rate of $100/hour.

Passive conservation efforts usually maintain the artifact in a waterlogged condition during excavation, transportation, and storage. The various methods of passively conserving organic archaeological material include irradiation, reburial, water tank storage, refrigeration, and wrapping in geotextile sheeting combined with storing in cool, dark areas. All of these techniques are used to inhibit the deterioration of the archaeological material by inhibiting the growth of marine degraders such as bacteria, fungi, and wood-boring organisms. The cost of reburial, is essentially free, as the only costs associated would be contracting the archaeologists to rebury the artifacts after excavation, and possibly the cost of monitoring afterwards, which would include the cost of soil or water monitoring device.

Irradiation, such as ultraviolet radiation and ionizing radiation (more specifically gamma irradiation), controls, inhibits, or terminates the degrading organisms and therefore, the deterioration as well (Ponting 1995:47). *In situ* preservation and reburial are two other forms of passive conservation which use the aquatic environment itself to control the degradation of the archaeological material. The reburial technique, actually a form of *in situ* preservation, operates by reburying archaeological materials beneath sediments in hopes of creating an anaerobic environment that is uninhabitable by most bacteria and organisms. *In situ* preservation is usually carried out when the archaeological site is under threat of exposure and deterioration—the artifacts do not necessarily need to be removed to be conserved and can be kept in their environment, usually with the addition of some form of geotextile covering or wrapping. In utilizing this method, the archaeologist records the condition of the site and continuously monitors the aquatic environment to determining the extent of degradation of artifacts. This is somewhat different from reburial, during which the artifacts are completely excavated from the burial environment, studied and recorded, and then reburied in suitable anaerobic sediments. Environmental monitoring is of the highest importance for all *in situ* preservation treatments because the archaeologist or conservator cannot predict the long-term suitability of aquatic sediments or the long-term efficiency of geotextiles.

Reburial. The technique of reburial was first approved in publication as early as the 1980s (De Jong 1981; Jespersen 1985, 1986; McCarthy 1986). Reburial of archaeological material is a form of *in situ* preservation in which the artifacts are excavated from the burial environment, studied and recorded, and then reburied in suitable sediments. In this case, the aquatic environment must be monitored regularly because the intent is to create an anaerobic environment. Only after the objects are studied does the archaeologist attempt to recreate the burial environment for their conservation treatment. There were attempts at reburial made in Holland where wrecks were uncovered in the Polders—these wrecks were reburied in the coast line with a technique that was intended to ensure a high water level (Björdal 2000; Nilsson 1998). Another type of reburial is the "sediment drop" strategy that has been attempted on a number of archaeological sites. While large areas of a site can be treated at once, the sediments can disperse outwards, instead of piling on a specific area, and there is a risk of damaging or contaminating the archaeological deposits with the force of the drop.

Backfilling an excavated archaeological site with the original overburden of sediments and ballast has also been performed often, but this method rarely provides an impermeable barrier to marine organisms and oxygen (Oxley 1996). The reburial of various species of wood in various sediments and depths of sediments have been studied in the past (see Björdal, Gregory, and Matthieson 2001; Gonzalez and Mathewson 1988; Gregory 1995; Gregory 1998; Hunter 1980; Oxley 1990; Oxley 1992; Oxley 1996) and the general agreement is that the reburial of archaeological material has the potential to be a labor and cost-effective method of preserving archaeological matter *in situ.*

The aquatic environment. The *in situ* preservation of archaeological materials must include consideration of the marine environment. The practice of reburial as well should undertake no less monitoring of the marine environment in which the artifacts will reside. The aquatic environment is affected mainly through three processes—the chemical, physical, and biological. The chemical environmental mechanisms include which is affected by the substrate material type, includes the salinity (for the marine environment), oxygen content and pH level. The physical processes to consider in the investigation are the hydrostatic pressure, temperature, light, and wave action due to tidal processes and currents caused by winds, storms, and passing vessels. The dynamism of the reburial environment and the effect that water currents and tides have on the sediments and reburied material can also be an issue. The biological action to consider in the reburial environment is the presence or absence of bacteria and other organisms. The presence of biological degradation is also affected by the substrate material type, amount of light penetration, the hydrostatic pressure, temperature, salinity, oxygen content, and pH levels (Dix, pers. comm). The aerobic macro fauna, fungi, and bacteria must be understood and will be discussed at length with particular consideration to their life cycles and the organic archaeological material each organism inhabits. The conservator must take into consideration the deteriorating organisms and microbes that exist in anaerobic environments, as the aim of reburying archaeological material is to create an anaerobic environment.

The deterioration of organic material. The way in which organic material degrades underwater is of the utmost importance to the conservation and preservation of logboats. The level of deterioration that is commonly found in different types of organic material and the manner in which this level of sensitivity will affect the material's reburial requirements is a priority concern in order to predict an archaeological object's suitability for reburial. In order to prevent deterioration from occurring during reburial, the conservator must understand and investigate the fouling mechanisms.

Historical Background of Logboats

Logboats were, and still are, used as general workboats. In the historic and prehistoric context, logboats were used mainly as fishing vessels. Other logboat uses include transporting goods or animals and moving people from place to place. Presently, logboats are still used in rural areas, floodplains, and tropical areas for daily activities (Fleetwood 1995:316).

Logboats are constructed from various types of tree species; however, a large log is a necessity. Because logboats are reduced from one large log, the original tree must be wider and longer than the end-product logboat. In the Southeastern United States, pine and cypress are common timber species used (Phelps 1989:2). In Europe, oak trees were most commonly used (McGrail 1978) to build logboats. In general, the logboat builder would exploit and tailor the logboat to the available wood species that happened to grow in that area.

Logboats often take different forms, usually classified by the keel line, the hull shape, inclusion of additional modifications (such as seats or additional washstrake boards), addition of paint, bow and stern distinction (whether there is a different between the bow and stern shape), and bow and stern form (what the actual form of the ends looks like). Most logboats found in the southeastern United States have a relatively flat keel line and a "U" or "C" shaped hull, but there have been discoveries of "V" shaped hulls and rocker and uplift keel lines. Additional modifications are evident in some southeastern logboats, however, it is unusual to see any sort of paint or decoration on southeastern logboats until the 20th century when logboats were expanded and used for fishing. The shape of the logboat bottoms are shown in figure 1 on page 11.

Archaeologists have found evidence for the prehistoric use of logboats throughout the southeastern United States, and often find large deposits of vessels in and around one lake, such as Lake Phelps, North Carolina and Newnan's Lake, Florida. Singular logboat finds also occur near lakes, but more often, in rivers and streams. Historical documents, living histories, and archaeologists provide evidence for the historic use of logboats in the southeastern United States from early European settlement to the 20th century. There are numerous interviews with people directly involved in constructing logboats used in the early 20th century (Fleetwood 1995:38), which provides invaluable information on the construction and use of these vessels.

Literature Review

The study of logboats reached a peak in the 1980's with many authors across the globe contributing articles of various foci to the discipline. However, quite recently there is a renewed interest in studying small watercraft, and specifically in studying logboats.

The progression of the study of logboats follows rather linearly. It begins with ethnographic accounts of natives using these boats to move from place to place and to fish. The scholarly interest begins with the mere recording of these boats in detail with little or no interpretation. These descriptive articles give way to investigations of the materials used in building the logboats as well as the distinctions made between logboats of different societies. The study of logboat morphology, vessels function, and environmental and structural adaptations of various types, is the next step in the progression. Lastly, issues of technical concern are considered, including the assessment of the capabilities of logboats in terms of speed, stability, and carrying capacity. Past research of logboats has focused on their cultural or geographic significance, rather than their environment. While scholars have studied logboats for years, very little is known about the factors that determine their form. The various methods of conservation are also pertinent to logboats. Though~~t~~ the general topic has not been well-examined, many articles discuss the conservation of a specific boat.

McGrail is the exception to these common trends in logboat study. He, with his 1978 work (McGrail 1978), is the forerunner of the 1980's interest in the study of the construction and science of logboats. However, until recently (Fry 2000, Mowat 1996), McGrail's technical theories had remained untested.

This section examines both the archaeological and ethnographic literature pertaining to logboats used on rivers and lakes. In an effort to focus this study, works pertaining to ocean-going logboats have not been included. While these vessels are important to the overall study of logboats, ocean-going boats are fundamentally different from inland ones. The ocean-going craft can be anywhere from double to ten times the size of inland boats, with outriggers, and are often used under sail for long distance trade and warfare. The inland logboats discussed here were used mainly for fishing, but were also important in transport and trade. The area of study is also restricted to Europe, Australia, and North America (mainly central and eastern North America). What are omitted are the various logboats from Central and South America, the Pacific islands, and western North America.

There are four major areas of logboat research. These are: technical, environmental, ethnographic, and conservation. While some works in the bibliography cross the boundaries of these topics, other articles do not truly fit into any of these categories. The articles that do not fit into any of the above topics have been assigned to a fifth "miscellaneous" category. If an article is associated with more than, one category, it is discussed in the most relevant category with a mention of the article's other attributes. Articles that encompass more than one category equally are discussed in all of the relevant sections.

Technical. Constructing a logboat is a fairly straightforward process, and is illustrated in figure 2. There are two basic methods: digging out the log with hand-held tools only and digging out the log with the use of fire and hand tools. The first step in making a logboat is to have a plan of how the shape should look—this can be done with an actual blueprint, but historically, the logboat maker probably relied on a variety of techniques to build the desired shape (what influenced the shape, is in essence, the main question). A suitable species of wood and tree would need to be selected depending on what is available locally, but a few considerations in choosing a log are the nearness to water, its length, width, contour and straightness, and with a non-spiral grain for easy splitting. The tree should not be felled when it is wet, and it can be done with an axe or with controlled fire. The log is then trimmed to length, the branches cleared off, and the bark stripped off by soaking, heating, or with tools such as an adze. If the log is large enough, it can be split into two halves and two vessels created, if it is smaller, one logboat can be made out of the tree. If the tree is split in half, the one or both of the two halves are roughly shaped into a boat-form by scraping, hacking, or using fire to clean out the inside of the log. If the log is used a as a whole, the log is still rough hewn in a similar fashion, but more of the sides and top must be shaved away. The outside of the log is also rough hewn as necessary with an adze or axe. Once the log is rough hewn, the pseudo-vessel is brought down to the waterfront (Fleetwood 1995:316-318; Fry 2000:13-15; Harriot 1588; McGrail 1978:28-35; McGrail 2001:175;423).

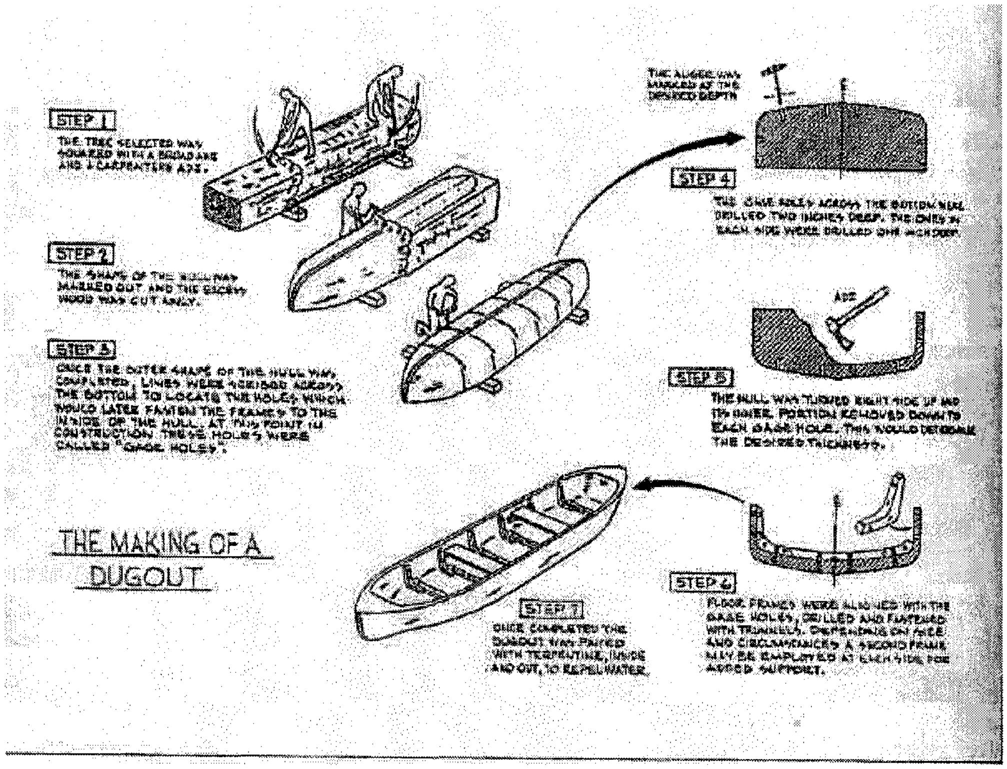


Figure 2. Logboat construction techniques (Fleetwood 1995:318).

The form of the vessel can then be established by eye or by marking the plan on the surface of the log. Thickness gauge holes are usually bored through the hull of the vessel to gauge the bottom thickness of the vessel. These gauge holes are then plugged with wooden dowels, or treenails, pounded into the hole. The vessel is then hollowed, according to the plan or by eye, by excavating the material out with tools (such as an adze) or with tools and controlled fire. The controlled fire could also be used to soften the inside of the log so that the future sides of the vessel are more pliable and can be shaped as needed. The final shaping involved cutting any stem, stern, or keel into the solid of the vessel. It is possible that some logboats were given a protective coating by charring the vessel, then scraping out the heavy charring, then applying a protective coat of oil or beeswax (Fleetwood 1995:316-318; Fry 2000:13-15; McGrail 1978:28-35; McGrail 2001:175;423).

The technical aspects of logboats are best addressed by McGrail's various articles and books (McGrail 1978; 1985; 1987; 1988; 1990; 1998), however, other authors (Fry 2000; Mowat 1996) have also contributed to this category. There are two types of technical study. The first focuses on the physical characteristics and capabilities of logboats that have been found and measured. The second type of study deals with reconstruction and archaeological experimentation. This study takes measurements of an actual logboat and then uses a model of the boat to test its capabilities in real-life situations. In *Logboats of England and Wales*, McGrail (1978) sets up a typology of the many logboats found in England and Wales into a classification system based on design type, performance, materials, and size. His calculations can be somewhat confusing, however, this work is regarded as one of the best, and most complete, works on the technical aspects of logboats. Mowat (1996) summarizes and synthesizes McGrail's typology, classification system, and calculations while also expanding upon them by including information on the logboats of Scotland. A simplification of McGrail's classification system comes with Malcolm Fry's (2000) *Coití: logboats from Northern Ireland*. Fry borrows from McGrail's technical tome on logboats to create a typology for logboats in Northern Ireland. His calculations and technical aspects are easier to understand than McGrail's, although his equations do not cover as many features of logboats as McGrail's (1978) calculations examine. Even so, this book stands as one of the top technical works on logboats.

McGrail uses his own classification system in two instances—in a *World Archaeology* article of 1985 and an *International Journal of Nautical Archaeology* article of 1987. In the *World Archaeology* article, McGrail compiles a cursory review of previous work on logboats as well as on general boat types. He then uses his typology from 1978 to create a general classification scheme for boats and small ships to identify similarities and differences between vessels of the same class. While his classification scheme is dense, it offers an original classification based on three essential attributes: buoyancy, fundamental conception, and principal techniques. In his *IJNA* technical note of 1987, McGrail extends his dating technique for logboats to include information he obtained from the Hasholme logboat he recreated in an experimental study (1980). McGrail uses selected logboat features correlated with an earliest and latest date for said features to aid in dating logboats. This technique is modified from his major work, *Logboats of England and Wales*.

In a transitional article, McGrail (1988) discusses various methods of assessing the performance of ancient boats. He specifically details the building of experimental replicas and the trials of such vessels. However, he determines that using hydrostatic curves and speed-related coefficients (discussed further in the method chapter) is the most cost-effective method of assessing boats. McGrail then utilizes this method to assess the Hasholme logboat and determines that the boat could carry 5.5 tons in a mere 75 cm of water. However, without stabilizers built at the waterline it would have been unlikely the Hasholme boat would be used at sea.

McGrail then investigates two examples of four hypothetical boat reconstructions. In "Prehistoric water transport in N.W. Europe" (1990), he discusses the origins of logboats in Northwest Europe and their method of construction. He discusses three logboats in particular, the Hasholme logboat, the Poole logboat, and the Brigg logboat in terms of their theoretical load capabilities based on their freeboard, draft, and deadweight. A year later, in *IJNA*, McGrail investigates the theoretical capabilities of the Clapton logboat. McGrail assesses the performance of the Clapton logboat by using hydrostatic curves derived from drawing of a hypothetical reconstruction of the boat (one side was badly damaged in the recovery). McGrail postulates that while there is room for four men in the boat, a one-man crew with cargo would be the most frequent use for this boat. McGrail also calculates that with three men rowing, the boat could reach speeds of 2.5 knots. He offers tables and graphs with the necessary caveat that the calculations and figures are accurate only for the hypothetical reconstruction of the Clapton logboat.

This last study is a transitional from the theoretical capabilities of logboats, to the tested capabilities of reconstructed logboats. Travis Hudson (1981) uses a boat reconstruction to test his hypothesis of ocean going logboat development. Hudson discusses the "Jobson and Hildebrandt model" of oceangoing logboats in Northern California through technical testing of the boat model in different types of seas. Hudson illustrates that the large oceangoing logboat was a larger model of the small river-going logboat types. He then goes on to discuss other types of boat models and elaborates on the possibility that it is hull shape, rather than size that determines the seaworthiness of a logboat. Christensen (1990) applies the techniques of experimental archaeology to his study of Stone Age logboats in Denmark. He begins by illustrating the distribution of fifteen logboats in Denmark along with their dates, species of tree, name, and whether they have been conserved. He then goes on to discuss in depth, the ten "most important" and best-preserved Danish logboats, including their excavation methods and conservation treatments. Christensen then concludes with a description of various experiments made in reconstructing Danish logboats and actually testing them in open waters.

Peter Marsden (1989) examines the experimental archaeology of logboats from an ethnographer's perspective. Instead of using the reconstruction of the Clapton logboat to test the physical capabilities of the boat, he studies the well-preserved tool marks on the vessel. Marsden compiled a variety of contributing sections in this wide-ranging article on the Clapton logboat. The article details aspects of the find and excavation of the logboat, the conservation of the boat as well as a detailed description of the boat itself. What is unique is that molds were taken of the tool marks present on the boat and from those molds, replica tools were fashioned. Following the discussion of tools, the authors delineate a sequence of building of the logboat from tree selection to hewing the final form. Through environmental studies, such as soil analysis, pollen, and faunal analysis, the authors speculate as to the area of Saxon settlement along the River Lea.

Environmental. Environmental studies of logboats can also embody multiple forms. The most common is the use of environmental archaeology techniques to approximate the past surroundings in which the boat was found. This is done by collecting floral and faunal samples associated with the logboat deposit. These samples can include anything from bones, to pollen, to seeds, to phytoliths. In this investigation, the past environment is being studied in relation to the boat. This study can also help the investigator to understand the circumstances surrounding the deposition of the logboat. The second type of environmental investigation finds an archaeologist looking at the environment contemporary with the logboat is used. In this study, the archaeologist would study the types of available materials and relate those to the material used to make the logboat. This can help determine whether the vessel was locally manufactured or originated elsewhere. This type of study can also provide insights on societies that were making logboats and the distribution of their boat forms. The third genre of environmental research pertinent to the study of logboats examines the available materials and relates those materials to different boat forms and functions. These studies tend to be rare in the available body of literature.

James Barnett's article in *Louisiana Archaeology* (1984) is an example of the first environmental investigation. Barnett discussed the analysis of a logboat found in the Homochitto River in 1983. Through wood analysis, it was determined that the boat was made from a single piece of bald cypress (*Taxodium distichum*). Through his historical and environmental investigation, Barnett learned that cypress stands were prevalent in the area along the Homochitto River. Over time the form of this logboat remains constant over time. In fact, the same type of boat was being used (and fashioned of cypress) throughout the twentieth century. The testing of wood samples in this study led to an environmental study, which determined that the logboat was made from locally abundant materials.

Pittman and Lipe offer a similar study in their article in *Florida Anthropologist* (1972). They discuss the recovery of several fragments of logboats from Black Lake in North Carolina. What is most interesting in this research is not the description of the boats, which is cursory, but the investigation of the wood used. Pittman and Lipe cite yellow pine as the material of choice and discussed further that yellow pine was a type of wood frequently used by Native American in the southeast due to the fact that it became malleable when gutted with fire.

McGrail's prolific writing makes an appearance in this category as well, with his 1987 report to the *Royal Archaeological Institute* regarding the Hasholme logboat. This report presents the results of the excavation of the Hasholme logboat in total. Some of the information is redundant from previous articles about the logboat, however this report investigates the natural preservation of the logboat as well as the environmental context. McGrail includes every detail of the characteristics and assessments of the boat itself, as well as the extensive environmental testing. McGrail illustrated that through these tests, the environmental history of the deposition of the boat could be reconstructed. While his conclusions are essentially not provable, they at least provide a plausible scenario for how the logboat came to be deposited. McGrail did conclude definitively whether the boat was abandoned or accidentally sunk however, he believes that due to the quality of the wood, the boat was intentionally sunk.

Thomas' article (1905) in *The Journal of the Anthropological Institute of Great Britain and Ireland*, while almost 100 years old, is still pertinent to the discipline and functions as a transition to the second type of environmental investigation. He records the species of trees available for making logboats in certain areas and correlates the use and construction of logboats. He uses contemporary visits as well as ethnographic evidence to determine the trees available. Thomas describes the two main types of logboats used in Australia and their subtypes. It is interesting that in different areas of Australia different types of wood are used to make the logboats, as well as different construction techniques. Thomas' article is a detailed account of all types of logboats in regards to their capabilities in the water as well as their names and tribal origins.

Only three articles in this essay represent the third type of environmental investigation. The first, and oldest, is by A. Lane Fox (1875). Fox describes the general stylistic advances witnessed in logboats, from blunt, undecorated ends, to more tapered and stylized ends. He references these modifications as a reaction to local environment and available resources. He effectively uses examples of logboats in different areas of the world, along with their environmental resources, to highlight his technology changes.

James Hornell has two articles in this area of research (1928, 1948). The articles are very similar in nature, however, the *Man* article (1928) discusses the area of South America while the *Mariner's Mirror* article (1948) discusses various locations. In *Man*, Hornell describes the development of the double outrigger logboats of South America through technical changes caused by modifications to the environment. He states that in South America, the double outrigger logboat had been modified from the earlier type of logboat. The outriggers developed out of a need for additional balance achieved through tying additional logs to the upper part of a simple logboat. In *Mariner's Mirror*, Hornell again investigates the changes in logboat construction due to environmental factors.

Hornell's article truly belongs in this section—he illustrates how logboat building techniques spread throughout Polynesia, Louisiana, India, the Marquesas Islands, and Malobar, very different areas with similar boat construction methods. He details how environmental factors in these different area influences the form of the logboat—the boat builders modify the standard form to make it better suited to their environment.

Ethnographic. The category of "ethnographic" is the largest because most of the articles uncovered dealing with logboats fall easily into this category. The category of ethnographic articles could include many different types of investigations, however, the primary genre of study included here discusses the people who created and used logboats. While other factors may be included in the author's research, such as environmental issues, the main thrust of the article is the ethnographic—the sociological aspect of travel by boat. Often, authors discuss the evolution of the logboat as a way of studying the people, however, the evolution of the boat is usually studied through time, and is not strictly attributed to the function of the boat or the available materials. The modifications of the logboat that most of these authors discuss are usually technical innovations that are the precursory to planked vessels or more advanced and seaworthy logboats. Because these articles and books are similar in nature, they are discussed in a rough alphabetical order.

Michael Alford (1992) discusses the origins of Carolina logboats in his article about the adaptations and modification of the single log boat. Alford continues the search for the elusive Carolina "periauger," described by John Lawson in the eighteenth century:

> The next Day we entered Santee River's Mouth, . . . As we row'd up the River, we found the Land towards the Mouth, and for about sixteen Miles up it, scarce any Thing but Swamp and Percoarson, affording vast Ciprus-Trees, of which the French make Canoes, that will carry fifty or sixty Barrels. After the Tree is moulded and dug, they saw them in two Pieces and so put a Plank between, and even a small Keel, to preserve them from the Oyster-Banks, which are innumerable in the Creeks and Bays betwixt the French Settlement and Charles-Town. They carry two Masts and Bermudas Sails, which makes them very handy and fit for their Purpose; . . . .Of these great Trees the Pereaugers and Canoes are scoop'd and made; which sort of Vessels are chiefly to pass over the Rivers, Creeks, and Bays; and to transport Goods and Lumber from one River to another. Some are so large as to carry thirty Barrels, tho' of one entire Piece of Timber. Others that are split down the Bottom, and a piece added thereto, will carry eighty, or an hundred. Several have gone out our Inlets on the Ocean to Virginia, laden with Pork, and other Produce of the Country. Of these Trees curious Boats for Pleasure may be made, and other necessary Craft. . . . This Wood is very lasting, and free from the Rot. A Canoe of it will outlast four Boats, and seldom wants Repair (Alford 1992; Lawson 1709).

He begins with references made by Lawson to "pereaugers and canoes" that were made of one log, split in two and joined by a plank in the middle. He cites one actual boat and photographic records as examples of this type of construction and hypothesizes that the building tradition was brought to the New World by refugee French Huguenots who settled in the Carolinas in the beginning of the 1680's. Marco Bonino (1981) writes a similar article, focused on the evolution of logboats. Bonino, in his discussion of rafts and boats in Central Italy, details literary, archaeological, and iconographic references and speculates as to the stylistic and technical development of logboats. While he does not find evidence of "very ancient" boats, he determines that the documents and examples studied illustrate a stylistic similarity through time. William Fleetwood's book *Tidecraft: the boats of South Carolina, Georgia and Northeastern Florida, 1550-1950* (1995) contains a chapter on the evolution of logboats. Fleetwood describes a large array of small watercraft in this work and includes a discussion of logboats from the earliest Native American use to the nineteenth century racing logboats of the Chesapeake Bay. While the book is sprawling in nature, he includes typologies of various forms of logboats, the materials boats are made from, as well as boat uses through time and society.

Mark Joseph Hartmann (1996) wrote his Texas A&M dissertation on southeastern United States logboats. He compiled a large database of logboats of the area, although he mainly focused on logboats from Florida, South Carolina, North Carolina, and Mississippi. Hartmann organized his data by geographic region and then by cultural affiliation, in this case, the particular Native American tribe when the affiliation could be determined. Many of the logboats Hartmann lists included physical measurements and characteristics that are helpful in this current research. Hartmann also listed logboats for which he found oral and documentary evidence, even if he did not actually see the vessel. He also lists the source of the information, which makes it possible for a future researcher to contact the said source and attempt to obtain further information on the logboats.

Hartmann's research and the current research have some overlap in the data set, however the purpose of the research differs. Hartmann focuses on the cultural affiliation of the logboat and examines associated artifacts and the relationship between a particular tribe and its artifacts. His is mainly a cultural study of Native Americans living in the coastal areas of the southeast United States. Riverine and lacustrine logboats are the prime artifact of these tribes, and Hartmann discusses their association. This dissertation focuses more on the logboat itself, the factors that influence the shape and form of the logboat, and the management of logboats as a cultural resource.

Paul Johnstone's work, *The sea-craft of prehistory* (1988), is similar in some ways to Fleetwood's book, however, Johnstone researches how the simple logboat evolved into a seagoing craft. The title of this work is rather misleading as the logboats Johnstone discusses originate as inland transport. He writes that the more sturdy seagoing boats originated inland as river and lake transportation. Johnstone includes information on the building of logboats, but also on the various developments to the standard simple logboats, such as expansion, lashing multiple boats together, adding an outrigger (or two), and a washstrake to increase the freeboard. He uses the Ferriby boats as the prime examples of these stabilizing techniques. The Ferriby boats are similar to expanded logboats in that they have a wide keel with two to three planks added to build up the sides. While the Ferriby boats (shown in figure 3) are not logboats, per se, they show a connection between a logboat with added washstrakes and plank-built vessels.

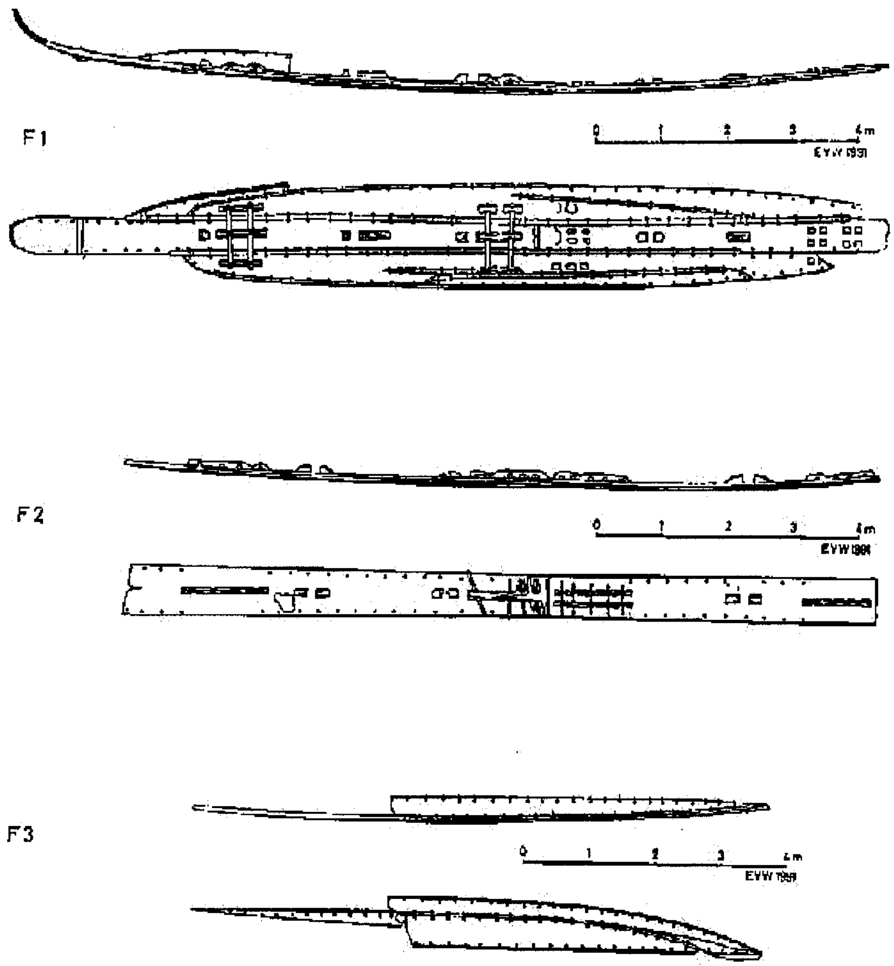


Figure 3 Illustrations of the three Ferriby boats (Copyright - Estate of Edward Wright).

Roth (1908) also studies the origins of contemporary use of logboats. He discusses the use of logboats, originated by Papuans, in Australia. Roth, writing in 1908, states that logboats were bought and sold along the East Coast from Cape York Peninsula to Hinchinbrooke Island up to four years before. Three different trade routes for the logboats from Australia to Queensland and the Torres Strait islands. He further details the incidence of indigenous peoples of Queensland constructing their own variation of boat tailored to the practice of fishing with spears off the bow. Thomson (1952), like

Roth, focuses his studies on the logboats of Australia. Thomson's article contains much of the same information that other authors have included in their synthesis of logboats in Australia. He discusses the different forms of logboats that appear in different areas of Australia, however, he does not hypothesize a reason for the different forms. What is most interesting in this article is a map that he created detailing the distribution of small watercraft in Australia—bark canoes, logboats, and rafts.

Robert Smith and Joe Valliant both discuss the adaptation of logboats to different functions within a society. Smith (1970) studies the use of logboats by the indigenous people of West Africa and their adaptation of the boat to warfare and trade. Smith intends to discuss in his article the use of the logboat in West Africa from the Mesolithic era to present day. However, he focuses his attention on the use of logboats in the pre-colonial era, as well as the role of the logboat in political and economic life and warfare. What is interesting is that Smith describes the many variations of West African logboat, each tailored to meet a specific function, such as inland fishing or warfare. Valliant (1983) studies a much different society, and a much different adaptation. He researches the modification of the simple logboat into the well-known racing boats of the Chesapeake Bay. Valliant's discussion of Chesapeake Bay logboats does not quite fit into any of these categories specifically because he deals with an interesting development in boats. On the Eastern Shore of Maryland, colonists first adopted the logboat building tradition from the Native Americans. By the end of the seventeenth century, the multi-log canoe was developed and from this, the racing canoe of the Chesapeake Bay. While this type of boat does not specifically correlate to traditional logboat research, it does illustrate the evolution of a boat-building tradition that has survived to the present day.

Carter, Kenchington, and Walker (1982) illustrate a different focus on the ethnography of logboats. The authors extrapolate from the recovery of a two-log boat to illustrate broader trends in the use of logboats. Carter, et al, detail the in situ survey of the only two-log boat from Nova Scotia and one of the few from Canada. The two logs that construct this boat are joined along a fore-aft line and are situated off center to the port side. The boat is compared to the Chesapeake Bay logboats and is attributed to the need to transport a greater number of people and a lack of timber. The Uniacke Lake boat is not dated but the authors have stated a terminus post quem of 1813, when the Uniacke House was built (the authors associate the inhabitants of the house with the use of the boat). The authors also state the importance of this boat in studying the extent of use of the two-log boat in Canada.

Brose and Greber (1982) author a similar type of study in their investigation of the Ringler logboat (the oldest logboat found in Ohio). They use this one boat to explore the larger issue of trade in the area. Brose and Greber discuss the recovery of the Ringler logboat in a limited manner and focus on construction details and assessment of its performance. Through the supposed performance, the authors speculate on trade patterns in Ohio. This investigation highlights the archaeological technique of exploring the individual to eventually study the larger picture. Edward S. Rogers (1965) also uses his recovery of a logboat to illustrate a larger trend in the use of logboats. Rogers' article could really be placed in two categories—the technical and the ethnographic. However, it remains under ethnographic because of the author's focus on the origin of logboats in North America. The technical aspect is the effort the author makes to date the boat found in Ontario with oral histories from Native Americans and European Americans as well as documents. He also attempts to correlate boatbuilding traditions (i.e. Indian or "White") with the form and material of boats found in Ontario. The author's main hypothesis however, is that logboat use originated with European settlers, who carried the tradition from their homeland. He postulates that the Native Americans of Ontario either adopted the use and construction of logboats from the European settlers or from other, more southern, Native American tribes.

Sean McGrail (1998) sheds some of his scientific experimentation using ethnographic evidence to create a different sort of archaeological reconstruction. McGrail details the process of building a logboat through ethnographic reports as well as archaeological evidence. Within this description, he includes a table of timber species according to region as well as date. He also includes a table of the time it would take to build a logboat. McGrail then launches into an extensive description of methods of stabilizing and extending the simple logboat. The timetable for building a logboat is interesting because in effect, McGrail attempts to create a reconstruction of a past society, instead of a boat itself, by testing the historical methods of logboat building.

T. D. Price also attempts to reconstruct a past society in his 1991 *Annual Review of Anthropology* article. Price uses archaeological examples, such as the logboat, to demonstrate that the settlement of hunter-gatherer societies in the Mesolithic age of Northern Europe was more "advanced" than previously thought. He states that while this era had been synonymous with cultural "degeneration," in the past, as well as societies of small, roving, mobile groups. Price believes those settlements such as Tybrind Vig in central Denmark and the Ertebølle period of Scandinavia as examples of larger, complex hunter-gatherer societies who held some ties to the land. Preben Rønne, in a chapter of *The Danish Storebœlt since the Ice Age: man, sea, and forest* (1997), attempts to fuel future research of an island previously thought to be uninhabited. Rønne discusses the recovery of three logboats from the island of Horsekær. The author describes these boats as possibly being moored with hazel stakes on an island used for temporary trade or for longer-term settlements. Rønne does not offer much evidence to support his hypothesis nor does he describe the boats, beyond giving their ^{14}C date.

The last five articles are cursory, but do offer information on the societies that created the logboats the authors recovered. Christensen, in another chapter of *The Danish Storebœlt since the Ice Age: man, sea, and forest* (1997), presents the reader with a general overview of the study of logboats in a specific area, (i.e. logboats from Denmark as a whole as well as regionally). He investigates Mesolithic logboats from different areas of Denmark and compares the form of the logboat to its function and how and if it was discarded. He also briefly discusses the method of construction of logboats, but does not differentiate construction methods of each region. Littlejohn (1929) offers a brief description of a logboat located in a lake in Northeastern California. Most of the information gathered by Littlejohn is through interviews with inhabitants who remember seeing the boat on the bottom of the lake. Unfortunately, the use of the boat and the people who built it are unknown. He does speculate on the use of an adze from various tool marks still visible on the hull of the boat. In another article about the Hasholme logboat, McGrail and Millet give a brief account of their work to date (1986). This article is a preliminary report and photographs of the discovery of the Hasholme logboat. While cursory in the breadth of information, McGrail and Millet provide details on the initial findings. They both believe that the find is unique in Britain, as the boat can be directly related to its surrounding environment through dated potsherds. In a similar manner, Robinson, et al (1999) discuss two logboats found in Ireland. These logboats are contemporary, both made of oak, and both display evidence of having a keelson. The Lurgan logboat for which this article is named, is used throughout the article to demonstrate the highly technical aspects of the boat, the need for a skilled boat builder, and to attempt to demonstrate that logboats were used more widely than previously thought. Finally, in his classic overview of the study of Native Americans, Clark Wissler (1914) provides an in-depth study of the material culture of Native American tribes in the United States. Mentioned as part of the material culture of Native Americans are the logboats used by various tribes. While he does not correlate logboat forms with different tribes, he does mention the materials used in building logboats by different tribes.

Conservation. There are surprisingly few articles within the conservation subsection. While it may be that more technical works on conservation will include details on the conservation of large waterlogged, wooden structures, articles specifically dealing with logboats do not seem to deal with the issue of conservation. Most of the articles do mention something about the natural preservation of the logboat *in situ*, however, very few mention if or how the logboat was or will be actively conserved.

Charlie Christensen (1990) is one of those authors who does discuss the conservation treatment of recovered logboats. In *Experimentation and Reconstruction in Environmental Archaeology*, Christensen begins by illustrating the distribution of fifteen logboats in Denmark along with their dates, species of tree, name, and whether they have been conserved. He then goes on to discuss in depth, the ten "most important" and best-preserved Danish logboats, including their excavation methods and conservation treatments. Christensen then concludes with a description of various experiments made in reconstructing Danish logboats and actually testing them in open waters. Heal and Hutchinson (1986) discuss the type of conservation being employed on three logboats from England. The authors compile information on three different logboats and briefly mention the conservation techniques being used. The three boats are not similar in form; besides all being made of oak and having flat bottoms. All three boats are incomplete and damaged in some way. It is interesting that the three logboats are being conserved through different methods—one by passive conservation storage, another through immersion in PEG, and the last through reburial.

Robert Munro's 1886 article does not explicitly discuss logboat conservation. However, not many methods of conservation were available to archaeologists at that time. The conservation treatments that were available, such as linseed oil and other fat-based substances, and waxes, have proven ineffective in the long-term treatment of waterlogged wood. Munro makes an interesting point in his article in regards to the location of logboat remains and to their antiquity. He states that many boats are found in crannogs of Ireland, lakes, and bogs due to the favorable preservation environment and elaborates on a point not normally discussed. That is that although logboats are usually attributed with an antiquity of age, however, this may not be warranted since it is apparent they were used over a large period of time, not merely in the prehistoric era. H. T. Waterbolk (1981) includes in his article an interesting note on natural preservation, similar to Munro's article. In his general overview of delta archaeology in the Netherlands, Waterbolk highlights the archaeology of logboats. More specifically, that Mesolithic artifacts are often found due to the geology of the country. Large amounts of Mesolithic remains are found on cover sand elevations along rivers and small valleys due to environmentally based preservation. It is interesting to note the various areas that offer natural preservation of logboats in order to possibly find more of these boats in good condition.

Miscellaneous. The miscellaneous category has many different types of articles. Some of these articles can be grouped together but the main theme of these articles is that they do not fit well into any of the other categories. Where appropriate, suggestions for future or additional research are included. These articles are presented in alphabetical order.

S. H. Andersen (1985) details the recovery and interpretation of the two Tybrind Vig logboats from the Ertebølle occupation. This article falls under the nomenclature of "miscellaneous" due to the broad nature of the study—As this is probably one of the best known logboat finds in Denmark, Andersen does not focus on one aspect of the resource, but details many different aspects of the study of logboats. He discussed the construction and materials of the boats, the factors affecting their preservation in the natural environment, their uses, and their comparison to other Mesolithic logboats.

Two articles deal specifically with the public management of logboat resources. Rosalind Niblett (2001) details the excavation of the vessel from Lake Albans, England. It is interesting that the boat was burnt in situ, but not uniformly over the length of the boat. There were cremated faunal remains inside of the boat's hull as well. While the construction of the logboat is not specifically discussed, the management of the resource is something with which the author is concerned, as opposed to the more research-oriented aspects of the resource. Ryan Wheeler, et al. (2003) offer a broad study of a collection of logboats recovered in Florida. In what is the most recent and available article on logboats, the authors describes the recovery and study of 100 logboats found in Newnans Lake, Florida during drought-induced low lake levels. It is interesting that the general boat form and materials do not change through time and the prehistoric forms and wood choices are similar to the later period forms and materials. The authors did find that the end shape changes over time and create a general typology for the end shapes found in the site.

Christine Peschel (1985) writes a unique article on a small model of a logboat. Peschel describes an interesting find of a small clay model of a logboat found in Wiesbaden, Germany. Peschel dates the model in the prehistoric Bronze Age due to the unformed or unworked ends and the rounded bottom, not by its archaeological context. The author also speculates as to the significance of the find and postulates that the model could have religious meaning or could represent a child's toy.

The next six articles unfortunately leave something to be desired. They are interesting because they document the recovery of logboats that would otherwise not be recorded, however, the studies are rather cursory. Richard Coulton's article (1977) inventories the different forms of boats found in Western Canada, their use, their material, and their current location. It would be helpful to study the materials of the boats compared with the available materials and the function of the boats. Fry and Martin (2000) deal with an aspect of logboats not discussed specifically in any other articles—what to do with them. The authors detail the highlights and barriers to public presentation of logboats and a method of making a lightweight mold of the boat for display. This article is a bare-bones practical piece of cultural resources management in Ireland. Kenneth Kidd (1960) describes a logboat found in Balsam Lake, Ontario, as unique due to its large size (20 feet long) and rather good preservation. However, there is no information on any details of the boat or the surrounding environment and merely goes on to state that as logboats are found more frequently, it is important to document individual boats. Mitchell et al (1968) describe a logboat found in Renfrew County in Ontario. Similar to the Kidd article, the authors do not describe the logboat in detail. Alexander Okorokov (1999) discusses 26 logboats found in Russia and Ukraine, delving deep into the details of each specific logboats, including radiocarbon dates and descriptions of identifying factors. Adrian Osler (1985) speculates on the possible link between nineteenth century "trows" and logboats. These trows seem to be made of two logboats joined together flush at the stem and divergent at the stern. However, he does not go into much detail and therefore the temporal progression of these two types of boat is unclear.

The last article under the miscellaneous category is placed here because of the hard-to-find references quoted in the article. John Thomas (1972) writes about the impact of African Americans on the indigenous Caucasian populations of Brazil and southern America. The value of this article is not so much what Thomas himself writes, but in his quotations from primary material. He cites a report from Sir Philip Mitchell detailing his experiences in Africa. Unfortunately, this is the only manner to obtain primary accounts such as Mitchell's when they are otherwise unavailable.

This literature review of logboats is designed to illustrate the larger tenors in a discipline that can often seem disparate. The books and articles offered here seem like a small collection and it may be that some works were unintentionally left out of this effort. However, hopefully, the authors left behind will be included in a future essay of this nature. It is also hoped that the Wheeler et al (2003) article is the beginning of a resurgence of research within the discipline.

North Carolina

Logboats are found throughout the state of North Carolina. There are concentrations in the Tar River and Lake Phelps, but the rest of the vessels are spread out over the lakes, rivers, and estuaries of the state. One of the more notable logboats is the Cottle/Half Moon logboat, which is in the Onslow County Historical Museum. This vessel is by far the largest logboat in North Carolina and is also unique because of its deep V-shaped hull, shown in figures 4 and 5below. Lake Phelps, in Pettigrew State

Park, has the largest concentration of logboats in the state and is discussed in detail below.

Figure 4. Inner hull view of the Cottle/Half Moon logboat (courtesy of the Onslow County Museum).

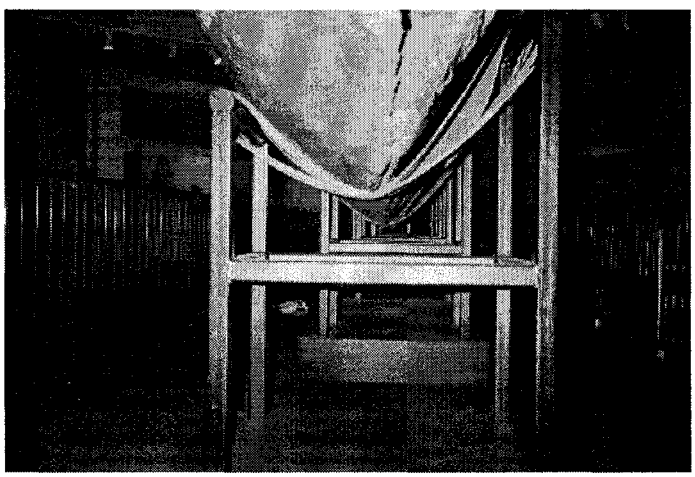


Figure 5. View of the deep V-shaped hull of the Cottle/Half Moon logboat (courtesy of the Onslow County Museum.

Historical background of Lake Phelps. Lake Phelps is the second largest natural lake in North Carolina and is the centerpiece of Pettigrew State Park in Creswell, North Carolina. Lake Phelps is thought to be 38,000 years old and is entirely fed by rainwater, which is why its waters are usually clear and slightly acidic. Currently, the lake is five miles across and has an average depth of four and a half feet, with a maximum depth of nine feet (North Carolina Division of Parks and Recreation 2005). In the past the lake was much larger, but over time, drought, and local water usage (e.g. pumping to fight fires) had lowered the water levels.

Early colonists called the area surrounding Lake Phelps the Great Eastern Dismal and the Great Alligator Dismal until Josiah Phelps and Benjamin Tarkington explored the area in 1755. Josiah Phelps stepped foot in the lake first and claimed the right to call it "Lake Phelps." Josiah Collins began to develop the area with the 1787 establishment of Somerset Place plantation (North Carolina Division of Parks and Recreation 2005; Washington Daily News 2004).

In 1937, the Federal Farm Security Administration bought the plantation from the Collins family, which transferred administration to the Division of Parks and Recreation. North Carolina Parks and Recreation created Pettigrew State Park, including Somerset Place, Bonarva farm (the Pettigrew family farm), the graves of General James Johnston Pettigrew and his ancestors, and Lake Phelps (North Carolina Division of Parks and Recreation 2005; Pettigrew State Park Management Plan 1995). The Park is designed to educate visitors on the natural, historical, and archaeological aspects of the area, as well as maintain a recreational destination for fishermen, hikers, and campers.

Archaeological background of Lake Phelps. Archaeologists and anthropologists investigated the Lake Phelps area of Pettigrew State Park in a limited fashion over the past 20 years. Unfortunately, there has not been a complete archaeological study of the area, although sites continue to be reported. The largest of these finds are a collection of

25 logboats, covering a range of dates, from the late Archaic to late Woodland era (4400 BP to 600 B.P.).

The Underwater Archaeology Branch of North Carolina (UAB) investigated the Lake Phelps logboats in 1986 when the levels in the lake were lowered due to drought, dry weather, and depletion of water used to combat forest fires. After measuring the boats and recovering associated artifacts and removing five of the complete logboats, the remaining boats were reburied where they were initially uncovered and the GPS coordinates noted for future reference. The logboats that the Underwater Archaeology Branch removed are now located in different collections in North Carolina. The Underwater Archaeology Branch conserved the logboats with a sucrose solution and controlled drying. One logboat is located at the North Carolina Museum of History, two are located in Pettigrew State Park, one is located at the North Carolina Estuarium, and the last one is in two fragments located at the Maritime Museum in Plymouth, North Carolina.

Environmental background of Lake Phelps. James Holley (1990) wrote his Master's thesis on the geologic and environmental history of Lake Phelps. In this work he discusses the origins of the lake, and determines the age of the lake and sediment deposits in and adjacent to the lake. He also determines the migration of the ancient and modern lake shoreline through stratigraphy and aerial photographs. Using sediment cores that provide a comparison for current sediment cores and a baseline for sedimentation to 1990. Holley also provides a valuable resource for the environmental background of the lake, which will enhance the historical and archaeological research.

The forests surrounding Lake Phelps house cypress stands that are 100 years old and large sycamore trees (one infamous sycamore loved by tourists is 120-feet across). Marked trails around the lake are marked with information on these trees (some of the largest in the state), in addition to the historic features (Somerset Place and the reburied logboats). Fishermen also know Lake Phelps as a premier location for large mouth bass fishing in North Carolina (Washington Daily News 2004; Shearin 2004).

Current investigation of Lake Phelps. In May 2004, Richard Lawrence, Nathan Henry, and Chris Southerly from the Underwater Archaeology Branch and the author returned to Lake Phelps with the transit and GPS coordinates from the initial investigation to relocate and partially uncover the logboats to determine their location and state of preservation. The aim of the research was to determine whether the reburial of the logboats in 1986 was a good option to ensure the preservation of the logboats.

The re-excavation of the logboats was not extensive in nature, as only a small portion of each boat *in situ* was uncovered for preservation analysis. The logboats were not difficult to find using the GPS coordinates from 1986 and all of the logboats, but four (#0007PHL, #0008PHL, #0014PHL, and #0015PHL), were located.

This study aided in the creation of a model for the management of cultural resources of this type—large finds of organic archaeological material. This plan includes the type and amount of data to gather in the field as well as information from primary and secondary resources, pertinent preservation questions, interpretation issues, and possible solutions to the question of what to do with the objects themselves.

Georgia

There are eight logboats currently housed in various collections in Georgia. The state underwater archaeologist, Jason Burns, offered the opportunity to record and documents these logboats in May 2005. There are many more logboats recorded *in situ* in the state, but they are not accessible and the ones in collections were readily available for study. Also, these logboats in collections have not been studied and their specifications were not on file at the state archaeology office, so this investigation has bolstered the state archives. The Georgia logboats range in age, cultural affiliation, and material. Most of them are displayed as part of a museum or gallery exhibit, but some logboats are kept in museum storage awaiting a future exhibit space. One vessel, featured in W.C. Fleetwood's *Tidecraft* (1995), is shown in figure 6 below. This logboat

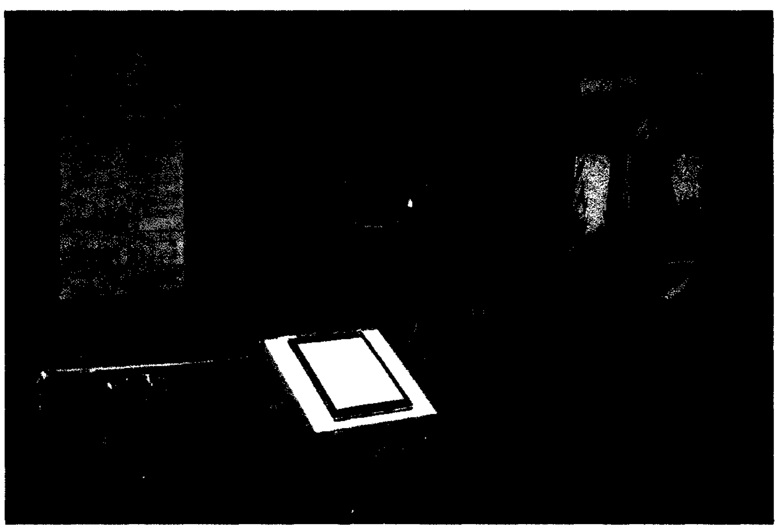


Figure 6. View of logboat from the Savannah History Museum in Georgia (courtesy the Savannah History Museum).

display is an example of a museum exhibit featured associated materials and first-hand accounts of the function of the vessel.

South Carolina

The records of the South Carolina Institute of Archaeology and Anthropology (SCIAA) contain numerous records of logboats found in the state both by state officials and amateur archaeologists with state permits. These records, in addition to eight logboats curated in museums around the state, provided invaluable information. Most of these logboats were discovered in South Carolina rivers although one logboat was found buried in the sand of the beach (38CH57/38CN171 Dunlap logboat found on Edisto Beach on the Atlantic Ocean coast) (SCIAA State files, 2005). The Oconee Heritage Center in Valhalla, South Carolina houses a logboat that was found in the Chattooga River which borders Georgia and South Carolina. This vessel is an example of a logboat undergoing continuing conservation. Shown below in figures 7 and 8 are pictures of the vessel when it was being removed from the river and while it is undergoing conservation with PEG.

Figures 7 and 8. The Oconee Heritage Center logboat during removal and conservation (courtesy of the Oconee Heritage Center).

Environmental Background of the Southeast

The environmental background of the southeastern United States is important because it helps to understand the environment the logboats were found in and potentially used. The geologic history of the lakes and rivers are important because the history of the environment in which the vessels were used can shed insight into the potential uses and the vessel required (considering most of the vessels were found in lakes and rivers and not on the beaches). The hydrologic background of Lake Phelps is discussed in the previous environmental background section. Here, the available tree species are described and the general hydrology of the southeastern United States is explained.

The most common tree species in this study are cypress (including bald cypress), pine (including yellow pine and southern hard pine), cedar, white oak, and poplar (the two most common by far are cypress and pine). In the information compiled, the species of wood is often referred to the generic cypress or pine, while these technically refer the broad family classification, there was no available information on the more specific genus or species.

Cypress is the generic term that refers to trees in the conifer family *Cupressaceae*. This family includes many different cypress species, including the bald cypress, or the *Taxodium* genus. This genus comprises the three species of conifers that are tolerant to flooding: *Taxodium distichum*, the bald cypress; *Taxodium ascendens*, the pond cypress; and *Taxodium mucronatum*, the Montezuma cypress. The only species identified in the records is the *Taxodium distichum*, the bald cypress. The bald cypress is native to the southeastern United States, including Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida, west to southern Texas and northwest to southern Illinois and Indiana (Coker and Totten 1945:43-44; Sternberg 2004:476; Wigginton 1963:241). The trees can reach 90-135 feet tall (30-45 meters) and up to 9 feet in diameter (3 meters). Bald cypress grows in river wetlands that experience periodic flooding by silt-rich waters (unlike the pond cypress which prefers silt-poor waters). While bald cypress stands once dominated the southeastern United States, the largest current stand is in Corkscrew Swamp Sanctuary in Naples, Florida containing trees that are 500 years old. The heartwood of bald cypress (and other cypress trees of the *Taxodium* genus) is extremely resistant to rot and insects (such as termites), although this resistant feature is more prevalent in older trees (Coker and Totten 1945:43-44; Sternberg 2004:476; Wigginton 1963:241). A bald cypress swamp is shown in figure 9.

Figure 9. Bald cypress swamp in Mississippi
(courtesy the Natural Resources Conservation Service).

Pine is also a generic term for coniferous trees in the genus *Pinus*, family *Pinaceae*. In the researching, logboats were classed as pine, southern hard pine, or yellow pine. Southern hard pine and yellow pine are vernacular terms for the longleaf pine, *Pinus palustris* (which translates to "of the marsh") (Coker and Totten 1945:22-24; Wigginton 1963:235). The longleaf pine is native to the southeastern United States, on the coastal plain from Virginia to Texas and can grow to 90-110 feet tall (30-35 meters) with a diameter of 3-4.5 feet (1- 1.5 meters). Longleaf pines take 100-150 years to reach full size and can live to be 300 years old; the seedling stage is shown in figure 10 and the full size shown in figure 11.

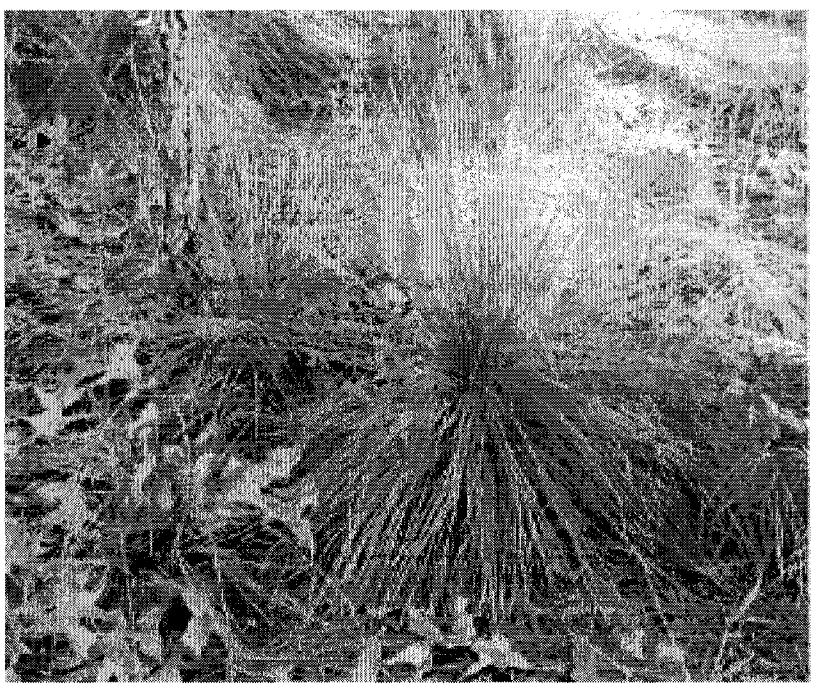


Figure 10. The grass stage seedling of the longleaf pine (courtesy GFDL images).

Often open longleaf pine stands are found because they are resistant to fire and, unlike other trees in the forest, can survive periodic wildfires (in fact, periodic burn offs are good for the longleaf pine) (Coker and Totten 1945:22-24). The southeastern Atlantic coast and the southern Gulf coast were once covered in forests of longleaf pine, which served as the main source for turpentine, resin, and timber for the military. Only 3% of the original longleaf pine forests remain because once deforested, by the naval stores industry, the longleaf pine is often replaced with loblolly pine or slash pine because they both grow faster (Coker and Totten 1945:22-24; FNA Editorial Committee 1993).

Figure 11. Longleaf pine forest near Georgetown, SC (courtesy GFDL images).

The course of Virginia's rivers and streams is determined by the geology over which they flow. Most flow east-southeast to the Atlantic Ocean or west-southwest to the Tennessee and Ohio River basins. Virginia is divided into the Cumberland Plateau, the Valley and Ridge, the Blue Ridge, the Piedmont, and the Coastal Plain, shown in figure 12.

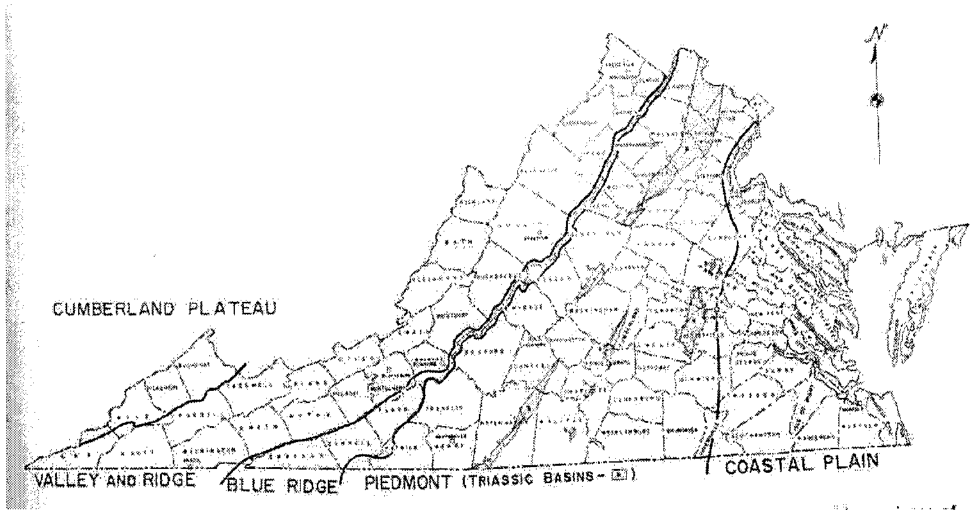


Figure 12. Line map of the physiographic provinces of Virginia (Dietrich 1970:103).

The Cumberland Plateau is drained by the streams of the Tennessee River system which has an irregular drainage pattern in the area. The Valley and Ridge province is divided into two areas, the northern one drained by Atlantic Basin streams and the southern one drained by the Gulf of Mexico streams. The Blue Ridge province is divided into two areas as well—the one northeast of the Roanoke River and the one southwest of the Roanoke River. The northeast area is an irregular mountain chain with rock exposures with elevations ranging from 1,200 feet near the Potomac River to 4,100 feet southeast of Luray. The drainage in this area is through steep-gradient streams that flow to the Atlantic Ocean such as the Potomac River, the James River, and the Roanoke River. The southwest area the main upland area ranges from 2,300 feet to 3,200 feet in elevation. The drainage in this area is through low-gradient streams that flow to the Gulf of Mexico. The Piedmont province is a network of hills and valleys that are marked by interspersed mountains called monadnocks. The rivers and streams flow southeastwardly across the regional trend.

The Coastal Plain province slopes towards the ocean and has a maximum elevation of 300 feet above sea level. The coast is marked by estuaries, bays, and swampland, most notably, the Dismal Swamp. The area where most logboats in Virginia are found is in the Coastal Plain, where streams have low gradients and become estuaries near the Chesapeake Bay. The rivers flowing into the Coastal Plain are the Rappahannock, York, James, and Chowan. The Coastal Plain of Virginia is a terraced landscape, where the scarps are ancient shorelines. The Chesapeake Bay, where the rivers terminate, was created about 5000 to 6000 years ago when the lower course of the Susquehanna River was flooded through sea level rise and shoreline erosion (Dietrich 1970:103-111).

North Carolina is divided into three different geologic provinces based on physiology: the Blue Ridge, Piedmont, and Coastal Plain, shown in figure 13.

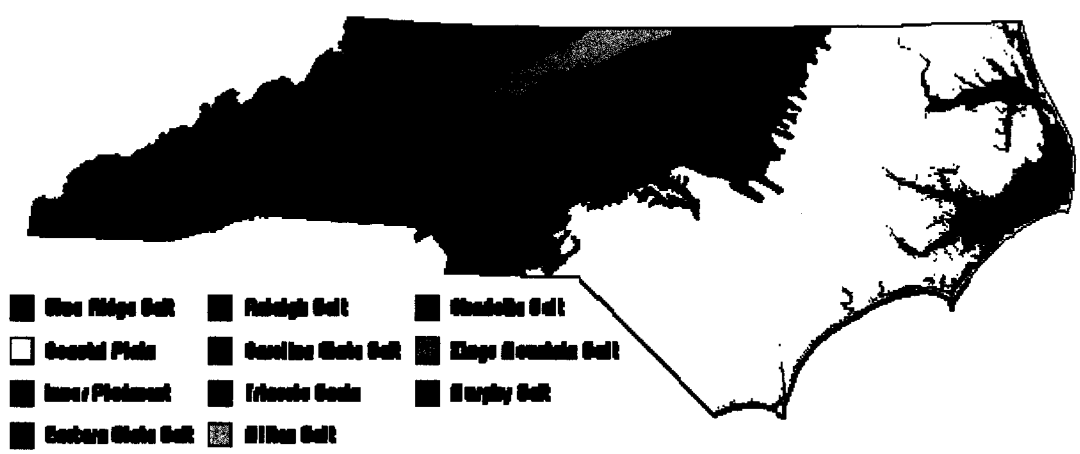


Figure 13. Physiographic provinces of North Carolina (courtesy of the North Carolina Geological Survey).

The Blue Ridge is the mountainous, and most westerly, area of North Carolina. This province includes the mountains of the Appalachian system with elevations averaging between 2,000 feet and 4,000 feet and peaks in excess of 6,000 feet. The streams in this area have many waterfalls. The streams of the eastern slopes of the region drain into the Atlantic Ocean while the streams of the western slopes drain into the Gulf of Mexico through tributaries of the Mississippi River. The Piedmont lies in between the Blue Ridge and the Coastal Plain and is characterized by varying land elevations. The main rivers in this area are the Catawba River and the Yadkin-Pee Dee River which both flow into South Carolina. The rivers and streams in this area cut through the red clay and often fill the banks during heavy rains. Lake Gaston, Kerr Lake, Lake Hickory, Lake James, and Lake Norman were all created through 20th century dam projects on the rivers and streams in the Piedmont. Logboats are found in all regions of North Carolina, but the largest concentration is on the Coastal Plain, which covers 45% of the state. The Coastal Plain is the eastern-most area of North Carolina and is the region where rivers converge into the estuaries. This province has an elevation between 20 feet and 500 feet above sea level depending on your location in the Coastal Plain and contains numerous swamps and lakes and is drained by many rivers and streams. The natural lakes in this area include Lake Phelps, Lake Mattamuskeet, the largest lake in the state, Great Lake, Lake Waccamaw, White Lake, and Black Lake. This area is also spotted with peat beds that are dried out lakes, known as the Carolina Bays (Powell 1989:1-10).

There are three river systems in North Carolina: ones that terminate in the Gulf of Mexico through the Mississippi River, ones that terminate in the ocean and flow through South Carolina, and ones that terminate along the eastern North Carolina coast. Of the rivers of that terminate on the eastern coast are the Chowan, the Roanoke, the Tar, the

Neuse and the Cape Fear, most are navigable for 50 to 100 miles inland depending on the draught of the vessel. The Cape Fear River is the only one that flows directly into the ocean, the others flow into the Albemarle and Pamlico sounds (Powell 1989:1-10).

South Carolina has five geologic regions: the Blue Ridge, Piedmont, the Sandhills, the Coastal Plain, and the Coastal Zone areas, shown in figure 14.

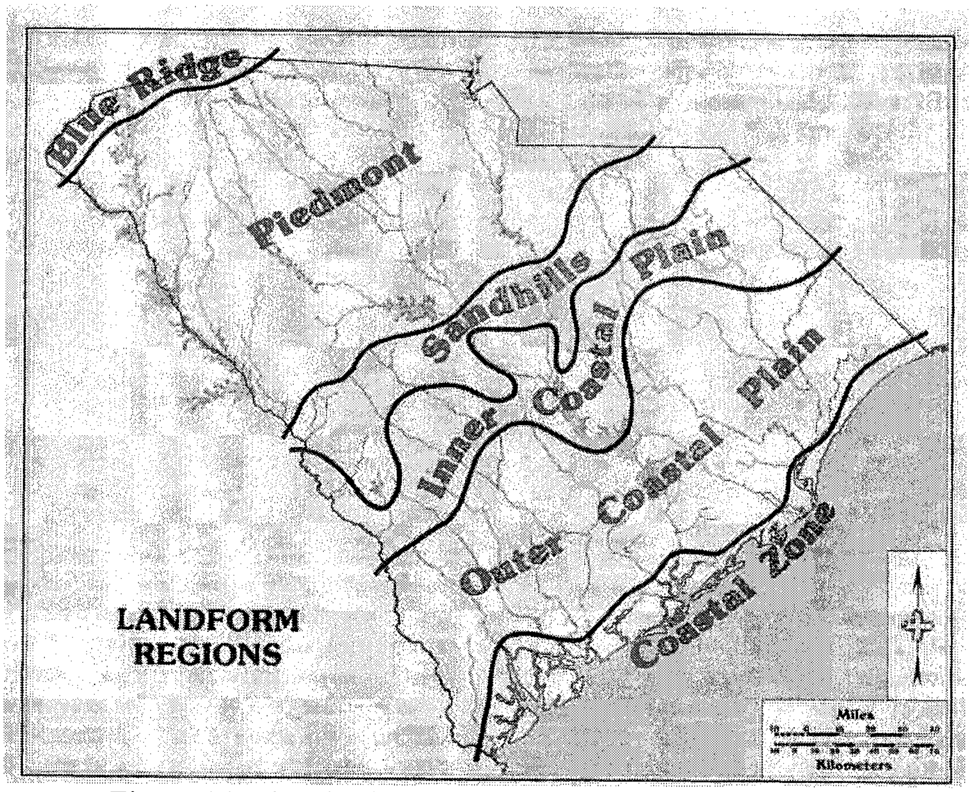


Figure 14. The physiographic provinces of South Carolina (Kovacik and Winberry 1987:15).

The Blue Ridge province is the smallest in South Carolina and elevations range from 1,400 feet to 3,500 feet with short, fast-flowing streams with rapids and waterfalls. The Piedmont province has gently sloping river valleys with long, sediment-filled tributaries. The Sandhills area overlaps the Fall Line where crystalline rocks of the Piedmont meet the sedimentary rocks of the Coastal Plain which creates rapid areas in the river courses.

The Coastal Plain is the largest area of South Carolina and is broken up into the Inner Coastal Plain with rolling hills and the flat, almost featureless Outer Coastal Plain. The coastal features that exist are due to the changing sea level with the retreat of the glaciers. These coastal features cause the Black River to change direction northeastward and the southward bend of the Edisto River at Givhan's Ferry. This area is also marked by the Carolina Bays seen in the Coastal Plain of North Carolina. The major rivers of South Carolina (a state covered by 6% water) are the Edistor, Pee Dee, Santee, and Savannah rivers. The Blue Ridge, Piedmont, and Coastal Plain are continuations of the geologic regions of the same name in Virginia and North Carolina. The Coastal Zone is comprised of the marshes, savannahs, and swamp forests of the Grand Strand (the sandy beaches from southern North Carolina to Winyah Bay, SC), the Santee Delta (from Winyah Bay, SC to Bulls Island, SC), and the Sea Island Complex (the sea islands, such as Kiawa and Hilton Head, and barrier islands such as Edisto Beach) (Kovacik and Winberry 1987:13-29). Logboats recorded for this study were found throughout much of South Carolina from Oconee County in the Blue Ridge area to Charleston, SC in the Coastal Plain.

Georgia has four regions: from northwest to southeast, the Valley and Ridge, the Blue Ridge, the Piedmont, and the Coastal Plain, illustrated in figure 15.

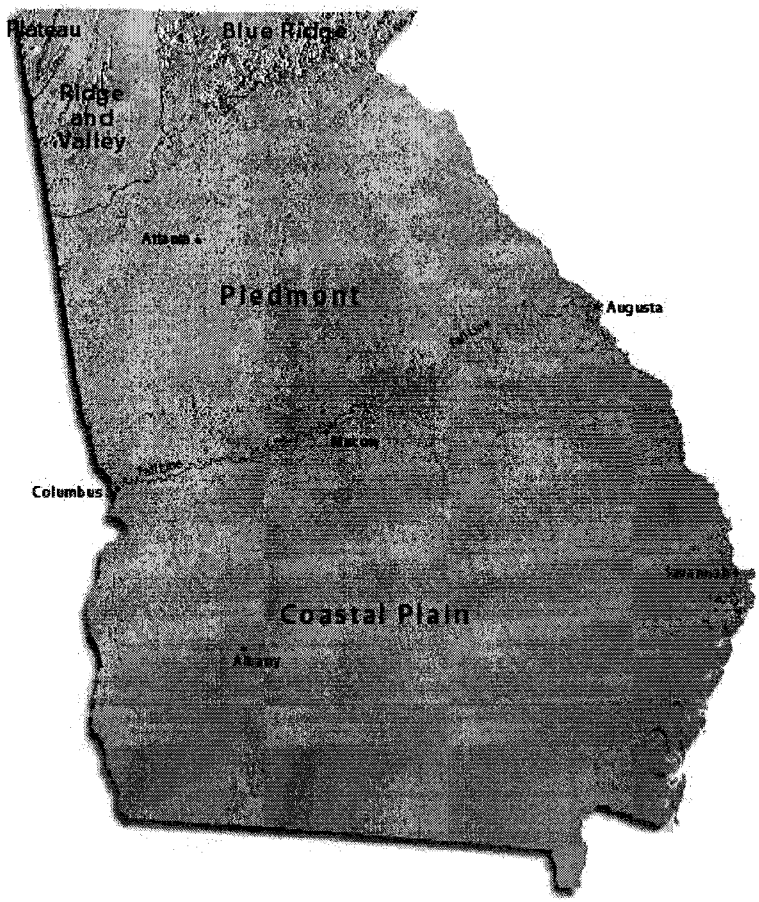


Figure 15. Physiographic provinces of Georgia (Carl Vinson Institute of Government, The University of Georgia).

Logboats have been discovered throughout the state, mainly in river banks and beds. The geologic barrier between the Piedmont and the Coastal Plain is called the "fall line," where the terminus of the inland navigable rivers are located for larger vessels. Upstream of the fall line, the rivers and streams have small floodplains and poorly developed meanders (areas where the river curves and changes flow direction). Georgia, like Florida, is prone to sinkholes, where dissolution of underlying limestone bedrock causes the earth's surface to collapse (Lawton 1977).

The entire state of Florida is located on the Floridian Plateau, which has been alternately exposed and covered by seawater over the past 65 million years. The largest estuary in Florida is the Indian River Lagoon System (IRL), which covers 40% of the eastern coast. The IRL system is comprised of the Indian River, the Banana River, and Mosquito Lagoon and is where fresh and salt water mix (Randazzo and Jones 1997:3-8). The rivers of the Floridian peninsula as a whole are oriented north-to-south. Where the limestone is close to the ground surface and there is little runoff, the water drains through sinkholes in the limestone. Sinkholes, caves, and natural bridges form because the limestone is softer than other material and dissolves relatively easy. Logboats in Florida have been found in rivers, lakes, and peat bogs, but the largest concentration of logboat finds has been in the Orange Creek drainage basin which spans the Alachua, Clay, and Marion counties (Wheeler et al 2003:534). Around 6,000 years ago, sea level rise affected the water tables in Florida and created the St. Johns River, the Everglades, and numerous other lakes in the Florida lake district, which Wheeler, et al (2003:546) believe caused Native Americans to begin using archaic logboats in extensive travel of Florida's natural waterways.

Texas contains five physiographic provinces: the Basin and Range, The Rocky Mountains, the Great Plains, the Interior Lowlands, and the Gulf Coastal Plain. There are also 15 local provinces, the six major ones are: the Southern High Plains, the Trans-Pecos, the North Central Plains, the Edwards Plateau, the Central Mineral Region, the Grand Prairie, the Black Prairie, and the Gulf Coastal Plain, shown in figure 16.

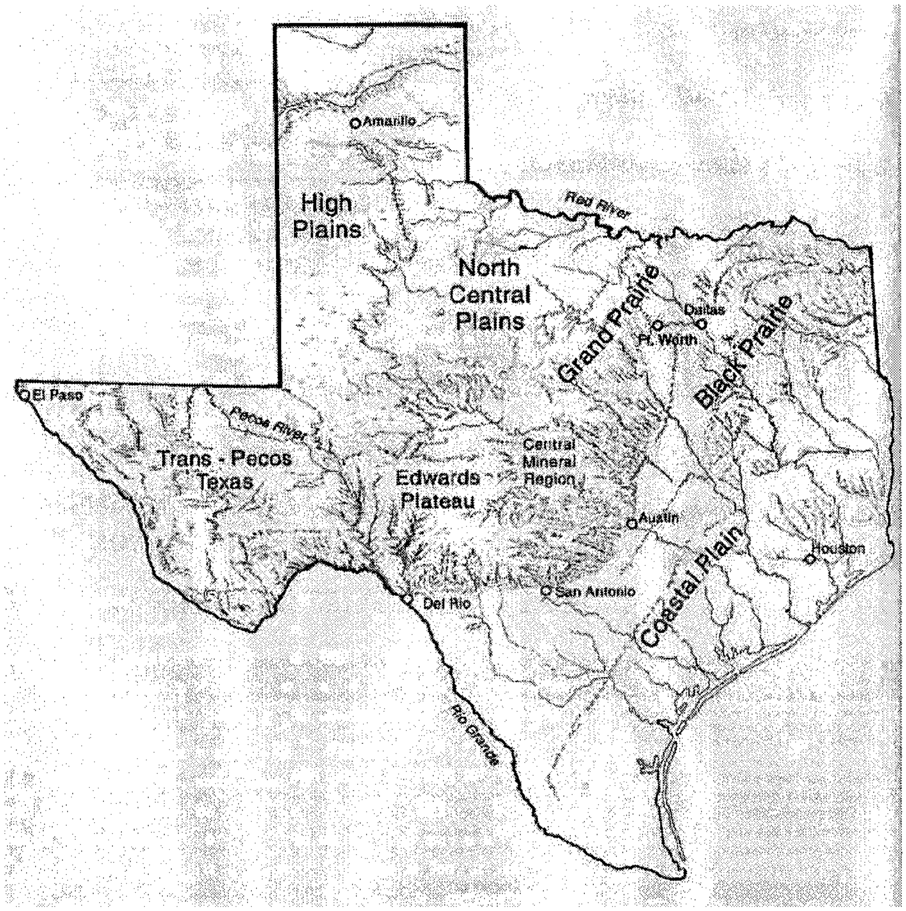


Figure 16. Physiographic provinces of Texas (Swanson 1995:24).

The Gulf Coastal Plain is the basin for the Sabine, Trinity, Brazos, Colorado, and Rio Grande rivers, which provide silt to the deltas and barrier islands on the coast. This silt supply has been reduced due to damming and coastal construction, such as jetties. The Southern High Plains is separated from the Great Plains by the Canadian River which drains from the Rocky Mountains into Lake Meredith. Most notable in this province are they playas, or small lakes, usually less than 0.5 miles in diameter (though some are considerably larger) (Swanson 1995:23-27, 31-33).

The southeastern states included in the previous discussion are made up of geologic provinces, some of which extend through neighboring states (such as the

Coastal Plain province). The topography and hydrologic background of these provinces determines the flow of the rivers and the formation of lakes, which are pertinent to the study of the history of logboats. Unfortunately it is not feasible to associate where the logboats are found to where they are used because the two are not necessarily the same. It is important in the study of logboat preservation because the environmental factors of the rivers and lakes can aid or hinder preservation of submerged vessels.

CHAPTER 3-METHODS

The typology outlined investigates the relationship between the morphology of logboats with other attributes assigned to the boats. Statistics were used to test the relationship between the date and species of wood with the physical morphology of the logboat and the potential for speed, handling, carrying capacity, mass, and freeboard (determined through mathematical equations). The physical morphology of the logboat refers to observed visual attributes such as keel line, bow and stern form and distinction, presence or absence of modifications for comfort, hull shape, bottom contour, and side shape. Other characteristics of the logboat that are important to the current research are the location where the logboat was found (this aids in determining the cultural affiliation) and the age of the vessel (usually determined through ^{14}C or radiocarbon dating).

Mowat (1996:6) uses observed characteristics of logboats in his typological assessment of Scottish logboats. His attributes are:

1. Canoe form: the ends of the boat are rounded in all three planes and the body is tapered with a rounded transverse section
2. Punt/barge form: the ends of the boat are rectangular in plan and inclined in elevation, while the parallel-sided body is flared or rectangular in cross-section.
3. Dissimilar-ended form: the bow of the boat is rounded in all three planes and the body is tapered with a rounded or rectangular cross-section, while the stern is of (solid) rectangular or (detached) transom form.
4. Box form: all elements of the boat are rectangular in all three planes

These characteristics were not suitable for the current investigation because too many of the important attributes were grouped into one definition. Each of these types of logboats can also be described by identifying the shape of the keel line, the shape and contour of the bottom, the hull shape, and the plane of the sides. Therefore, the following observed attributes were listed for possible use:

1. Bottom shape
2. Keel line
3. Side contour
4. Bottom contour
5. Bow/stern distinction and shape
6. Presence or absence of seats and other comfort-based modifications

In the course of the investigation it became apparent that two other characteristics were not practical to evaluate because there was not enough available data. The attributes not considered were "fineness" and tools used in creation. Authors rarely considered the "fineness," or quality of workmanship, in the available previously published research. Very few authors mentioned the quality of the vessel and it was concluded that the determination of quality was ultimately too subjective archaeologically to be meaningful. The identification of tools used in the creation of the logboat is helpful in establishing the relative age of the vessel and would have been an interesting attribute to include, however there was not enough available data to provide a statistically significant characteristic.

The attributes, and their definitions, used in the final research are:

1. Bottom shape (V-shaped, U-shaped, C-shaped, squared U-shaped): This attribute refers to the cross-section shape of the hull and corresponds to the side contour attribute. It is also known as the hull shape. The letter shape refers to the rough shape of the cross-section, for example, a C-shaped vessel will have a rounded cross-section, while a squared U-shaped vessel will have a squared off, almost rectangular trough-like, cross-section (See previous figure 1).

2. Side contour (concave, square, rounded, and flared shown in figure 17): The side attribute corresponds to the bottom shape and refers to the shape or contour of the sides of the vessel in cross-section and in relation to the hull. The concave side corresponds to the U-shaped and slight C-shaped hull, the square side correlates to the squared U-shaped hull, the rounded hull corresponds with the full C-shaped hull and has sides that curve in on itself at the top, and the flared sides correlate to the V-shaped hull. The sides are viewed in relation to the hull or keel line and a 90-degree angle between the side and hull would refer to a square side.

Concave sides. Flared sides. Square sides.
Figure 17. Side contours

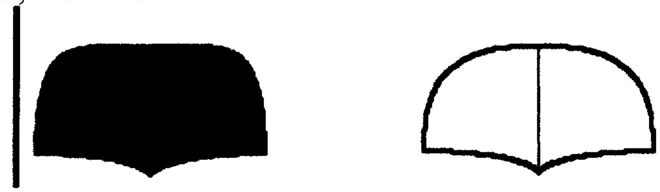
3. Keel line, shown in figure 18, (straight, slight uplift, moderate rocker, extreme rocker):
The keel line attribute refers to the line of the keel when viewed from the side. A straight keel line runs flat from the middle of the vessel and does not arch upward at all. As the arch of the hull from the middle of the vessel increases, the characteristics increase from slight uplift to extreme rocker (the most severe arch of the keel line).

Flat keel line.

Rocker keel line.

Slight rocker keel line.
Figure 18. Keel lines

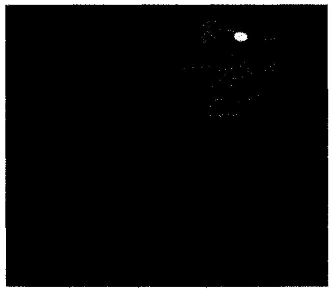
4. Bottom contour, shown in figure 19, (flat, arched, other):
   The bottom contour attribute refers to the bottom of the hull viewed in a cross-section. While this seems similar to #1, the bottom shape, the bottom contour refers only to the hull cross-section that sits on the ground, not included the contour of the sides of the vessel. A flat-bottomed vessel will sit flush with the ground, while an arched bottom contour will not sit flush with the ground and will rock back and forth on the keel, if allowed to sit on a flat surface.



Flat bottom contour. Slight rocker contour.
Figure 19. Bottom contour

5. Presence or absence of seats and other comfort-based modifications:
   While it is interesting to note the type of comfort addition or modification to the vessel, for statistical purposes, the presence or absence of additional modifications is noted with an affirmative (yes) or negative (no). Additional modifications do not only refer to modern appendages. There are instances of thwarts present in logboats from the late Archaic Period and are considered additional modifications (Wheeler, et al 2003).

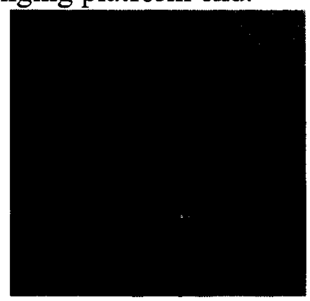
6. The bow and stern distinction and shape (end shapes shown in figure 20):
   This is actually two separate characteristics, the noted distinction between the bow and stern and the shape of the bow and stern. These data were difficult to include because the available data on the shape and distinction of the bow and stern were not systematically recorded and no standard of classification used for bow and stern shape types. The distinction between the bow and stern is noted with a "distinction" or "no-distinction." The shape of the bow and stern has been characterized in many different ways by different authors, however, here, the shapes used are: spoon, pointed spoon, overhanging platform, square, and pointed overhang.



Angled end.

Overhanging platform end.

Pointed angle end.



Pointed spoon end.

Spoon end.

Square end.

Figure 20. End configurations.

In addition to these observed attributes, the theoretical speed and handling characteristics of the logboats are also considered. These theoretical characteristics are represented through numeric coefficients attained through mathematical equations from McGrail (1978). In addition to the coefficients listed in McGrail (1978), this research also includes McGrail's (1978) calculations for the hull mass, unladen water line, and carrying capacity of each logboat. The equations require a number of measurements from each logboat in order to calculate each numeric attribute and coefficient. These measurements are length, depth, average beam (width), height amidships of the hull, and the average thickness of the hull (calculated will the thickness of the hull and sides at various points). Also necessary for these equations are the species of wood from which the logboat is made, in order to determine the density of the wood species. Unfortunately, all of this information was not available for every logboat, so in some instances, the author estimated certain data through available scale drawings. These conjectured data are not extensive and include the information from the logboats estimated from available scale drawings of the logboats (these estimations are noted with an asterisk in the raw data).

The calculations for the handling and speed characteristics of the logboats from McGrail (1978) and Mowat (1996:5-6) are:

1. Hull mass: **[2x Average H x L] + [Average Beam x L]=A** (where H is the height measured in cm, L is the length measured in cm, beam is measured in cm, and A is the transverse section area in cm^2); **A x Av. Thickness=B** (where the average thickness is measured in cm, B is measured in cm^3); **B x Sp. Density of green wood= approx. hull mass** (where the specific density is the density of the green wood measured in kg/cm^3 and the hull mass is measured in kg).

2. Unladen water line: **Q=√(mass in kg/L x Av. Beam in m^2)** (where Q refers to a theoretical quotient that corresponds to a measurement in cm).

3. Safe loading capability (at 30% and 40% freeboard): **[(60%(or 70%) x H'-D/H'[xM])]/[(LxBxH')]x(LxB)** (where D=unladen draught from Q, L=length in m, B=beam in m, M=mass in kg, H'=average height amidships in m, and 60% and 70% correlate to 40% and 30% freeboard respectively).

4. Volumetric coefficient (Cv)(indicates speed potential):
Displacement volume in m^3/length waterline^3 in $m^3 = \nabla / Lw^3$
(the displacement volume is determined through the equation Volume in m^3=Mass in kg/density in kg/m^3).
Any value less than 0.0001 indicates that the logboat hull has a high speed potential (Mowat 1996:6).

5. Midships coefficient (Cm)(indicates speed potential):
transverse section area in m^2/(beam x draught) in m^2= **A_x/B_xT** (the transverse section area=A=[2x Average H x L] + [Average Beam x L] all in m). A value of less than 0.85 indicates the logboat hull has a considerable speed potential (Mowat 1996:6).

6. Block coefficient (Cb)(hydrodynamic efficiency):
Displacement volume in m^3/(BxLxDraught) in m^3
(the displacement volume is determined through the equation Volume in m^3=Mass in kg/density in kg/m^3).
Values from 0.5-0.65 are fine; values from 0.75-0.85 are full. Logboats with a maximum value of one are rectangular in shape and section (Mowat 1996:5). This value represents the boxiness of the vessel and illustrates another dimension of the speed and handling characteristics.

7. Slenderness coefficient (Cl/b)(indicates speed potential and handling characteristics): **CL/B=L/B**
Length in m/beam in m=high values represent long, thin plan, more difficult to turn, greater speed potential; 5-8 is a passenger boat; 6-7 is a cargo boat. Narrow boats, having a slenderness coefficient of 3.75 or higher, are fast and easily propelled. More beamy logboats have a slenderness coefficient of 2.6 or less and are more directionally stable. The higher the number for slenderness coefficient, the faster and harder to handle the logboat will be (Mowat 1996:5).

McGrail (1978) used these calculations to determine the possible function of the logboats, which may be the only way to obtain those interpretations without first-hand accounts. Fortunately for a number of modern logboats in this study, the particular function is recorded through oral histories of the original owners of the vessels. However, for the older vessels that do not have any written or oral record attached to them, the equations represent the theoretical capabilities and a variety of possible functions that correlate to the theoretical handling capabilities.

Statistics

The above 13 attributes were input into an SPSS data file and manipulated for analysis. In addition to the frequency tables utilized for almost every ordinal attribute, the following analyses were conducted:

1. Bottom shape (V, U, C, square)=chi square
2. Keel line (straight, slight uplift, moderate rocker, extreme rocker)=chi square
3. Sides (concave, straight, flared)=chi square
4. Bottom contour (flat, arched, other)=chi square
5. Bow/stern distinction=chi square
6. Presence or absence of seats and comfort modifications, etc=chi square
7. Hull mass=ANOVA dependent
8. Unladen water line=ANOVA dependent
9. Safe loading capability=ANOVA dependent
10. Volumetric coefficient=ANOVA dependent
11. Midships coefficient=ANOVA dependent
12. Block coefficient=ANOVA dependent
13. Slenderness coefficient=ANOVA dependent
14. What determines canoe form/attributes? (materials, chronology, geography/ethnicity)=ANOVA independent

Preservation and Management

Analysis of logboat preservation in this paper is based largely on observed characteristics, such as erosion, biological and chemical attack, and the structure and tactile properties of the wood. These logboats are arranged into three categories. The first category includes those vessels that have been removed from the burial environment and professionally conserved. The second category includes those that are removed from their burial environment and not professionally conserved. Logboats reburied in the original depositional environment (not necessarily the same spot, merely in a similar environment) comprise the third category.

The best sample available to study each of these categories is the collection of logboats from Lake Phelps. Of the 26 logboats found in this lake, four were removed and professionally conserved, 20 were reburied in the lake, and two were left in the bank of the lake and not covered by the lakebed or lake water. This information is supplemented with additional data observed from logboats during travels in South Carolina and Georgia. The logboats from South Carolina and Georgia are not a single isolated group of finds, such as those from Lake Phelps. These additional logboats offer valuable information on logboats removed from various environments and were either professionally conserved or not conserved and are owned by or are loaned to museums. There is a large amount of information available on Florida logboats through the Florida State Site Files. One of the larger collections of logboats is from Lake Newnan, Florida where Wheeler, et al, (2003) recorded over 50 vessels.

There are three cursory characteristics important in determining the outward preservation of logboats, physical abrasion, structural wood condition, and environment of deposition. Measurements taken of the logboats can indicate degradation of the sides and ends of the vessel in particular, and in some cases abrasion and a wearing away of the hull. The sides and ends of logboats are particularly susceptible to erosion and breakage. The sides are fragile because they are generally the thinnest section of the vessel with the least support. The ends are delicate because they protrude, especially when both ends are pointed as opposed to squared off, and wears along the edges very easily. The hull of the vessel is not generally prone to physical abrasion, but it can be broken if the structure of the wood is weak and the vessel is mishandled. The outside of the hull can also wear away slightly, but it is not usually a weak point.

Wood condition can also affect the preservation and is different from physical degradation. Wood condition refers to the structural hardiness of the wood cells, while abrasion refers to a mechanical action of rubbing or abrading the layers of wood in the vessel. Wood condition varies widely from vessel to vessel and is determined on the deposition environment and how often the vessel experiences the cycle of exposure and reburial. External characteristics of wood condition can be determined through touch—a vessel that has the consistency of wood pulp is not structurally sound, while a vessel that feels the same as cut wood is structurally sound. In addition to the cell structure of the wood, the physical structure of the vessel can be altered through burial. The sides of the logboat can wobble from the hull, even if the cellular structure of the wood is generally sound. Cracks can occur in the logboat hull over time and the wood can splinter off of the structure of the vessel as it dries out. The more often the logboat is exposed to an alternately wet, then dry, environment, the more likely structural damage such as cracks and splintering will occur. Depending on the chemistry of the water, the cellular structure of wood can degrade even if the logboat is continually waterlogged.

Water chemistry is a part of the depositional environment. If the water is saline or brackish, the degradation may be higher than in fresh water. Additionally, if the fresh water is slightly acidic, such as a pH of 6, the preservation may be higher (this is the particular case in Lake Phelps, North Carolina). The seasonal changes of the body of water are also important to the depositional environment. If periods of seasonal drought or flood alter the water level, the structure of the buried logboat will be affected. In a riverine or marine environment, the flow of the water is important to the depositional environment. A dynamic environment may lead to more erosion of sediments and any buried object while a stagnant environment will create a physically stable depositional environment. The details on the importance of the water chemistry in the depositional environment are explained in detail in the background chapter.

Collections Used

Much of the data used in the study has been gathered from previously published books and articles. The previously published data used here includes drawings and measurements of logboats found throughout the southeast. This information totals a large portion of the data, most significantly from Florida and Texas. State master site file records were obtained from both Virginia and Florida and the data comprises every logboat in the state that is known by the respective state archaeologists. Some site files are very detailed while others merely list where the logboat was found and who found it. The author collected the other data used in this study. These data are from North Carolina, South Carolina, and Georgia and are described below.

North Carolina. In addition to the state master files that record all logboats known to the State Underwater Archaeology Branch (UAB), the dissertation required an amount of field work to add to the previously known data. While UAB has records of all of the logboats known to the state, not all of the files contained complete measurements.

In particular, state archaeologists documented, but did not fully measure, a number of the logboats found in Lake Phelps in North Carolina.

Lake Phelps. Twenty-six dugout canoes were known by state archaeologists to be buried just below the surface of Lake Phelps in Pettigrew State Park. These canoes are of various ages, size, and condition. The vessels were excavated and recorded in 1986 by the Underwater Archaeology Branch of the Office of State Archaeology of North Carolina. The ages of these canoes were identified through radiocarbon dating, however, the dimensions of the vessels were not recorded. The canoes are currently buried in the sediment of Lake Phelps in a position recorded by both transit and GPS.

The present study uncovered the logboats reburied in the 1986 investigation, in order to relocate and record differential GPS coordinates of their locations, take measurements of some vessels, and visually and photographically record the preservations of the vessels. The photographic record of the current preservation of the logboats in situ will be compared with photographs from the previous investigation to determine the preservation of the canoes after they were reburied in 1986.

South Carolina. In addition to the files on record with the South Carolina Institute of Anthropology and Archaeology (SCIAA), visits were made to the Charleston Museum of History, the Horry County Museum, and Charles Towne Landing Park to investigate logboats housed at these locations. The files available from SCIAA were extensive and included records of logboats that were both extensive and spare. Most of the logboat records lacking data were ones privately owned or excavated by private parties with a state permit. These types, however, were the minority. SCIAA employees recorded most of the logboats and included numerous photographs, measurements, and geographical information.

Georgia. Logboats in Georgia had never been recorded and listed on a central database prior to this dissertation research. Field research involved traveling to numerous museums and taking measurements and photographs of logboats on display. The state underwater archaeologist did have a record of which museums housed logboats, making the research easier. There were a total of 11 logboats recorded in Georgia: two from the Savannah History Museum, one from the Massie School, one from Cumberland Island National Seashore, two from the Thronateeska Heritage Center in Albany, one housed in the offices of the cultural resource firm Brockington and Associates, one in Waleska at the Funk Heritage Center, and one in the Oconee Heritage Museum (technically in South Carolina, although the logboat was found in a river that borders both South Carolina and Georgia). The state underwater archaeologist also knew of various logboats remaining *in situ*, unfortunately, there was not enough time and manpower to investigate all of these vessels.

Florida. The data compiled from logboats in Florida was largely found in the Florida State Site Files on record with the Division of Historical Resources. All archaeological sites with logboats were investigated and the available measurements and information added to the dissertation database. Additional logboat data was found in the Wheeler, et al article in *American Antiquity* (2003).

Texas. All of the logboat data from Texas was compiled by Mark Joseph Hartmann and is available in his dissertation (Texas A&M 1996). This is an invaluable resource for many logboats in the southeast United States, but particularly for logboats in Texas.

CHAPTER 4-ANALYSIS

Morphology

The main hypothesis is that the environment, which includes the available materials, determines the form of logboats. The form of the logboat refers to the shape of the hull in plan and profile, the shape of the sides, the shape of the ends, and if there is distinction between bow and stern. The alternate hypotheses are that the cultural affiliation of the boat builder determines the form of logboat, that the theoretical use of the vessel determines the form of the logboat, and that the time period in which the vessel is built determines the form of the logboat. The null hypothesis is that logboat morphology is, in fact, truly random. These hypotheses were tested by evaluating typological attributes of the logboats.

The typological attributes include multiple numerical values representing theoretical handling and speed capabilities, form attributes that describe the vessel morphology, the wood type, and date. The dependent variables of the hypothesis are the wood species and date of wood. The analysis of the numerical interval data (hull mass, crew capacity, unladen water line, and the speed coefficients) involved the use of analysis of variance (ANOVA) and comparing means of each attribute with SPSS software. The means test is used for these interval data because the values are actual numerically meaningful. For example, a slenderness coefficient of 12 represents a certain speed capability and investigating the means of each attribute against the dependent variables will illustrate any relationships between the means of the interval data and the dependent variables. The means themselves also show the average capabilities of the logboats. The

ANOVA test also compares means, however, here a fixed-effects model is used, which assumes the data comes from a normal population. This test can also lead to tests of statistical significance. The normal distribution, also known as the standard normal distribution, is the normal distribution with a mean of zero and a standard deviation of one with the resulting plotted curve known as the bell curve (Moore and McCabe 2003:68, 747). In terms of the logboat data set, a normal curve bell curve assumes that the dimensions of the logboats in the data set fall under a standard bell curve. While this may not be true, per se, in this investigation; it is a valid starting off point in order to attempt to make sense of multiple data.

The analysis of the visual logboat data was done by recoding the attribute labels into numerical values and treating these ordinal data as interval. These data were tested with the crosstabs function, which looks at the distribution of the attributes over the dependent variables, the frequencies of each attribute, and the chi square test using the same SPSS software as above. The chi square tests the probability of obtaining the data by random chance, the goodness of fit, which tests the theoretical model against the actual data, and independence of the data, which tests the independence of paired observations on two variables. The data were also tested to look for relationships between the date and the type of wood, using the crosstabs function (Moore and McCabe 2003:15, 612, 624). The visual data were recoded in order to perform the statistical tests. The following lists the attribute and the subsequent value recoding of the data:

1. Bottom contour: straight=1, slight uplift=2, uplift=3
2. Bottom shape: C-shaped=1, U-shaped=2, squared U-shaped=3, V-shaped=4, platform=5
3. Additional modifications: yes=1, no=2
4. Keel line: flat=1, rocker=2, raked transom=3, split dugout=4, slight rocker=5
5. Sides: concave=1, squared=2, flared=3, rounded=4, none=5
6. End distinction: N/A=1, yes=2, no=3
7. End shape: spoon=1, pointed spoon=2, rounded angle=3, pointed angle=4, overhanging platform=5, square=6, wineglass=7

The independent variables were recoded as follows:

1. Date: prehistoric=1, middle archaic=2, late archaic=3, early woodland=4, middle woodland=5, late woodland=6, historic=7, modern=8
2. Wood species: cypress=1, bald cypress=2, pine=3, yellow pine=4, southern hard pine=5, gymnospermae=6, cedar=7, other=8

The hypothesis of the environment determining the form of the logboat was tested by looking for a relationship between the species of wood and the visual characteristics of the logboat. In addition to this, the additional hypothesis of chronology determining the form of the logboat was tested by looking for a relationship between the date of the wood and the visual form of the logboat in a similar method to testing the environment hypothesis. The hypothesis that the geography or cultural affiliation affects the form of the logboat was tested by looking for a relationship between the area the logboat was found and the visual attributes of the logboat by breaking the geographic regions down into individual states. The Native American tribes were not used for the cultural affiliation because it is not possible to match definitely a particular tribe to a logboat. Logboats are found in many regions and where they are found is not necessarily where they were used because the tribe may be seasonal or traveling away from their tribe's known location. It would have been possible to identify regional variability in terms of state to state, but statistically, there was not enough data to make the statistically meaningful. Too much of the data was from either Florida or North Carolina, therefore, any differences between the logboats in these two collections skewed the data.

The hypothesis that the potential use of the logboat affects the form was tested by looking at the speed and handling characteristics, hull mass, unladen water line, and crew capacity attributes with the visual attributes. All of these values are attained through calculations aimed to arrive at a theoretical number and therefore do not necessarily correlate to the actual use of the logboat in question. The coefficients are grouped together to describe a logboat as fast or slow and easy or hard to handle in the water. The crew capacity and unladen water line help understand the theoretical carrying capacity of a specific logboat. Whether these attributes affect the visual form of the logboat is tested by analyzing how the visual attributes change in correlation to the speed and handling characteristics and the carrying capacity.

The sample size of logboats from which the data are extracted is used to generalize about the larger logboat population. Because the sample is used to determine information about a population, the larger the sample size ~~is~~, the more accurate the generalizations will be. Statistically, this means that the larger the sample size, the less likely the researcher is of committing a type II error; failing to reject an invalid null hypothesis (Moore and McCabe 2003:425, 778-780).

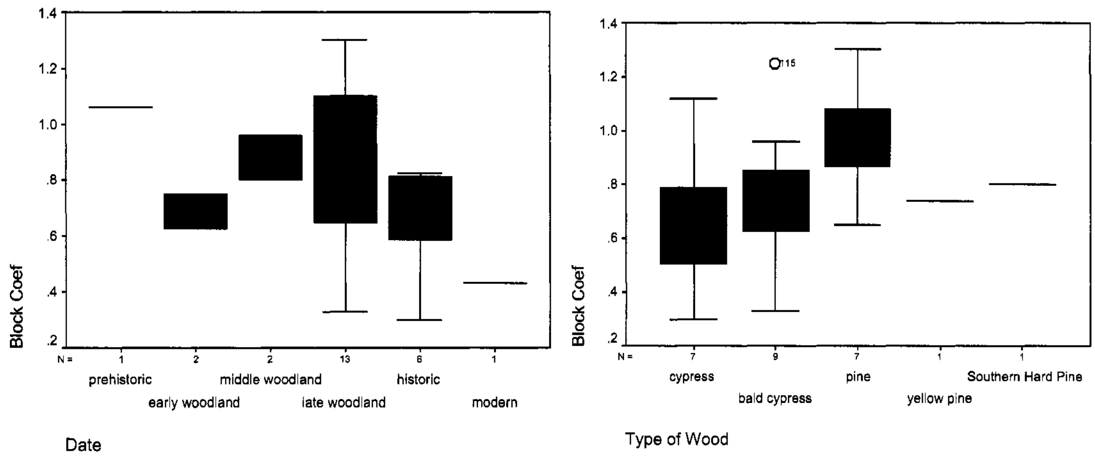
In this case, there are 395 logboats in the sample size to extrapolate information about the larger population of southeastern United States logboats. There is varying amounts of information for the 395 logboats. Every logboat has a location and name recorded, 318 logboats have some form of measurements recorded, 50 logboats have enough measurements and information available to calculate the theoretical speed and handling characteristics with the McGrail (1978) equations (which require length, width, height, average thickness, and wood type), 267 have a date (although of those with a date recorded, only 198 are recorded as a radiocarbon or ^{14}C date), 252 have a wood type recorded, 71 have information about the ends of the logboat, and 92 have complete information on the visual attributes (certain logboats have more information on specific visual attributes than others, so the number will be higher than 92 for different visual attributes). In this case, the sample size is sufficient to formulate a testable model. However, with the addition of more logboats in the future, the results will only be more credible because the sample will be larger and therefore more representative of the population.

Statistical Results

The following results show the numerical means for the theoretical speed and handling characteristics of logboats and what those means represent:

ANOVA Block Coefficient:

Logboats made of pine in the prehistoric era are near 1.0, which is the highest block coefficient. This means that those vessels are very rectangular and fuller in body. Logboats made of cypress in the modern era are near 0.5 and 0.7, which is the lowest block coefficient, meaning the vessel is not rectangular and therefore speedier due to less water resistance. This means that those vessels are not rectangular and more slender in body. The remaining means are listed below and illustrated in the following (the extended statistical analysis are available in figures 21 and 22).



Figures 21 and 22. Block coefficients for the dates and wood species, respectively.

For the date values, Late Archaic, Middle Woodland, and Late Woodland have a lower speed potential and are more block shaped. For Early Woodland, Historic, and Modern vessels the speed potential is higher and the form of the vessel is finer. For the wood species, pine and southern hard pine have a lower speed potential and are block shaped. Cypress, bald cypress, and yellow pine have a higher speed potential and are finer.

ANOVA Midships Coefficient:

Logboats made of pine and yellow pine have a mean coefficient of 0.85 or lower and therefore have a greater speed potential. Logboats made of cypress, bald cypress, and southern hard pine have mean coefficient values greater than 0.85 and therefore have a lower speed potential. Prehistoric (used when the general term of prehistoric was identified in the available data), late archaic, and late woodland vessels made of pine, and all historic and modern vessels have a mean coefficient of 0.85 or less. All early woodland and middle woodland vessels have a mean coefficient of greater than 0.85. This is illustrated in the following table 1.

Date	Type of Wood	Mean	Std. Deviation
prehistoric	pine	.49000	.
	Total	.49000	.
late archaic	pine	.46700	.
	Total	.46700	.
early woodland	bald cypress	1.09500	.629325
	Total	1.09500	.629325
middle woodland	bald cypress	1.10000	.
	Southern Hard Pine	1.14000	.
	Total	1.12000	.028284
late woodland	cypress	1.70000	.
	bald cypress	1.34800	.469542
	pine	.82333	.330313
	yellow pine	.89000	.
	Total	1.09769	.465316
historic	cypress	.85400	.463821
	bald cypress	.79000	.
	Total	.84333	.415676
modern	cypress	.83000	.
	Total	.83000	.
Total	cypress	.97143	.496703
	bald cypress	1.20222	.445471
	pine	.73713	.321639
	yellow pine	.89000	.
	Southern Hard Pine	1.14000	.
	Total	.98258	.435541

Table 1. Midships coefficient means for date and type of wood.

ANOVA Slenderness Coefficient:

In general the results of the slenderness coefficient were the most numerous, and therefore most reliable, of all coefficients because the only information required to calculate the coefficient is the length and beam. Logboats made of all wood types are considered "beamy" and mainly directionally stable. Within those, however, the cedar, bald cypress, and yellow pine have the highest mean coefficient and are the most directionally stable. The prehistoric, middle archaic, historic, and modern logboats have the lowest mean coefficient and are less directionally stable. The remaining means are listed below and illustrated in the figures 23 and 24.

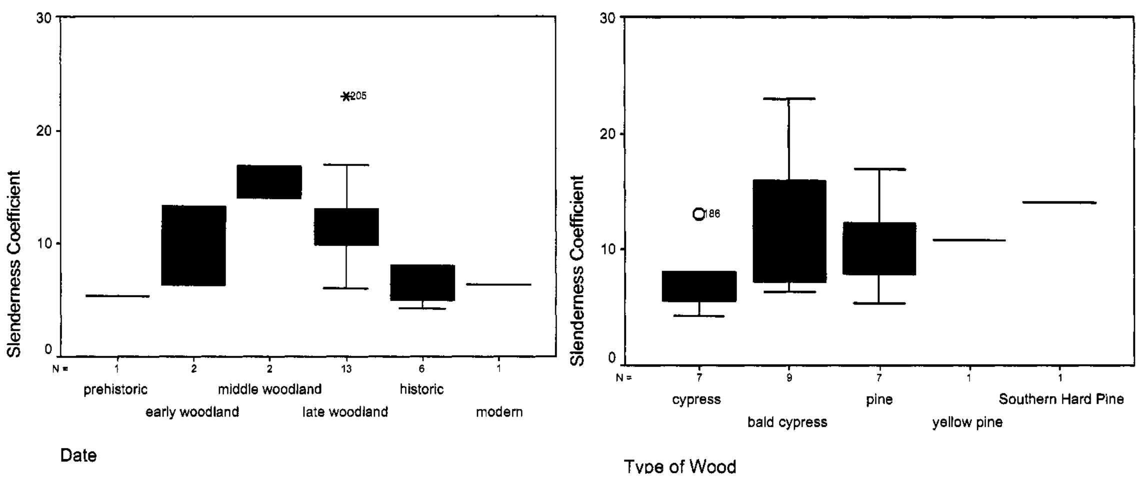


Figure 23 and 24. Slenderness coefficients for the date and wood species, respectively.

ANOVA Volumetric Coefficient:

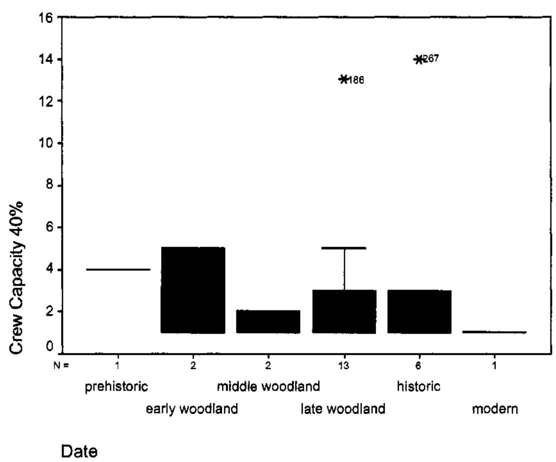
Any logboat that has a mean coefficient of less than 0.0001 has a high speed potential. Unfortunately, the data, when calculated, did not result in any values of less than 0.0001. This could mean that all the vessels have a lower speed potential, or that the calculations were incorrect, or that the equations do not work as well in practice as they do theoretically. The means are listed below and illustrated in the following table 2.

Date	Type of Wood	Mean	Std. Deviation
prehistoric	pine	.0094000	.
	Total	.0094000	.
late archaic	pine	.0040000	.
	Total	.0040000	.
early woodland	bald cypress	.0016500	.00120208
	Total	.0016500	.00120208
middle woodland	bald cypress	.0011000	.
	Southern Hard Pine	.0014000	.
	Total	.0012500	.00021213
late woodland	cypress	.0015000	.
	bald cypress	.0012090	.00091881
	pine	.0042333	.00329100
	yellow pine	.0018000	.
	Total	.0026727	.00266134
historic	cypress	.0022800	.00084083
	bald cypress	.0030000	.
	Total	.0024000	.00080747
modern	cypress	.0014000	.
	Total	.0014000	.
Total	cypress	.0020429	.00079762
	bald cypress	.0014939	.00098106
	pine	.0048500	.00333509
	yellow pine	.0018000	.
	Southern Hard Pine	.0014000	.
	Total	.0026825	.00240802

Table 2. Volumetric coefficient means for date and type of wood.

ANOVA Crew Cap 40%:

The logboats that have the highest crew capacity at 40% of their unladen water line are vessels made of cypress. This result is somewhat skewed due to one large logboat made in the late woodland of cypress (the Cottle/Half Moon logboat). Eliminating this outlier, vessels made of pine have the highest crew capacity at 40% of the unladen water line. The lowest crew capacity is seen in vessels made from yellow pine. Historic vessels carry the most people at 40% of the unladen water line and modern vessels carry the least number of people. The results are illustrated in the following figures 25 and 26.



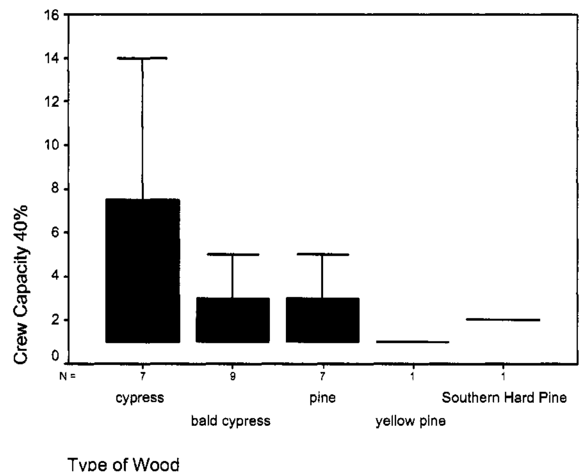
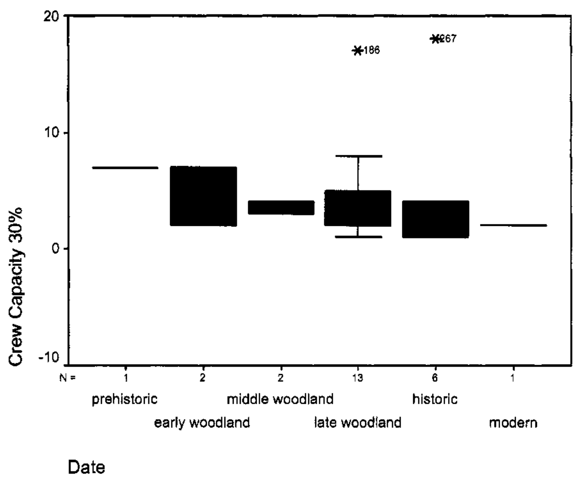


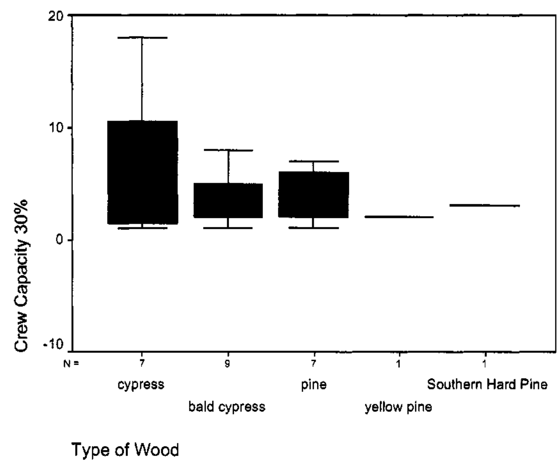
Figure 25 and 26. Crew capacity at 40% for the date and wood species, respectively.

The logboats that were dated to time periods of Prehistoric, Early Woodland, Middle Woodland, Historic, and Modern hold the least people (between 1-4), while the Late Woodland vessels hold the most people (up to 13 in one case, which may skew the data due to this one large vessel). Vessels of all wood species hold between 1-4 people.

ANOVA Crew Cap 30%:

The logboats that have the highest crew capacity at 30% of their unladen water line are vessels made of cypress. This result is also skewed due to one large logboat made in the late woodland of cypress (the Cottle/Half Moon logboat). Disregarding this logboat, vessels made of bald cypress have the highest crew capacity at 30% of the unladen water line. The lowest crew capacity is seen in vessels made from yellow pine. Historic vessels carry the most people at 30% of the unladen water line and modern vessels carry the least number of people. The results are illustrated in the figures 27 and 28.





Figures 27 and 28. Crew capacity at 30% for the date and wood species, respectively.

Vessels from the Early Woodland, Middle Woodland, Historic, and Modern time periods have the lowest crew capacity (from 2-5 people) while vessels from the Late Woodland hold the most people (although this may be skewed data from one large vessel which holds 17 people). Vessels made of pine, yellow pine, and southern hard pine hold from 2-3 people. Vessels made of cypress and bald cypress hold from 4-6 people.

The frequencies test yielded interesting results on what attributes were most common. The following tables 3-12 show the percentages for the hull shape attributes:

Additional Modifications

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	44	11.1	41.9	41.9
	no	61	15.4	58.1	100.0
	Total	105	26.6	100.0	
Missing	System	290	73.4		
Total		395	100.0		

Table 3. Additional modification frequencies.

Date

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	prehistoric	24	6.1	9.2	9.2
	middle archaic	4	1.0	1.5	10.7
	late archaic	62	15.7	23.7	34.4
	early woodland	9	2.3	3.4	37.8
	middle woodland	20	5.1	7.6	45.4
	late woodland	72	18.2	27.5	72.9
	historic	58	14.7	22.1	95.0
	modern	13	3.3	5.0	100.0
	Total	262	66.3	100.0	
Missing	System	133	33.7		
Total		395	100.0		

Table 4. Date frequencies.

Keel Line

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	flat	90	22.8	93.8	93.8
	rocker	3	.8	3.1	96.9
	raked transom	1	.3	1.0	97.9
	split dugout	2	.5	2.1	100.0
	Total	96	24.3	100.0	
Missing	System	299	75.7		
Total		395	100.0		

Table 5. Keel line frequencies.

Sides

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	concave	72	18.2	62.1	62.1
	squared	32	8.1	27.6	89.7
	flared	5	1.3	4.3	94.0
	rounded	3	.8	2.6	96.6
	none	4	1.0	3.4	100.0
	Total	116	29.4	100.0	
Missing	System	279	70.6		
Total		395	100.0		

Table 6. Side shape frequencies.

End Distinction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	n/a	29	7.3	40.3	40.3
	yes	24	6.1	33.3	73.6
	no	19	4.8	26.4	100.0
	Total	72	18.2	100.0	
Missing	System	323	81.8		
Total		395	100.0		

Table 7. End distinction frequencies.

End Shape 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	spoon	24	6.1	33.3	33.3
	pointed spoon	24	6.1	33.3	66.7
	rounded angle	5	1.3	6.9	73.6
	pointed angle	8	2.0	11.1	84.7
	overhanging platform	11	2.8	15.3	100.0
	Total	72	18.2	100.0	
Missing	System	323	81.8		
Total		395	100.0		

Table 8. End shape 1 frequencies.

End Shape 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	spoon	8	2.0	18.6	18.6
	pointed spoon	6	1.5	14.0	32.6
	pointed angle	5	1.3	11.6	44.2
	overhanging platform	6	1.5	14.0	58.1
	square	16	4.1	37.2	95.3
	wineglass	2	.5	4.7	100.0
	Total	43	10.9	100.0	
Missing	System	352	89.1		
Total		395	100.0		

Table 9. End shape 2 frequencies.

Type of Wood

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	cypress	40	10.1	15.4	15.4
	bald cypress	56	14.2	21.5	36.9
	pine	121	30.6	46.5	83.5
	yellow pine	8	2.0	3.1	86.5
	Southern Hard Pine	17	4.3	6.5	93.1
	gymnospermae	8	2.0	3.1	96.2
	cedar	3	.8	1.2	97.3
	other	7	1.8	2.7	100.0
	Total	260	65.8	100.0	
Missing	System	135	34.2		
Total		395	100.0		

Table 10. Wood species frequencies.

Bottom Contour

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	straight	76	19.2	82.6	82.6
	slight uplift	13	3.3	14.1	96.7
	uplift	2	.5	2.2	98.9
	slight rocker	1	.3	1.1	100.0
	Total	92	23.3	100.0	
Missing	System	303	76.7		
Total		395	100.0		

Table 11. Bottom contour frequencies.

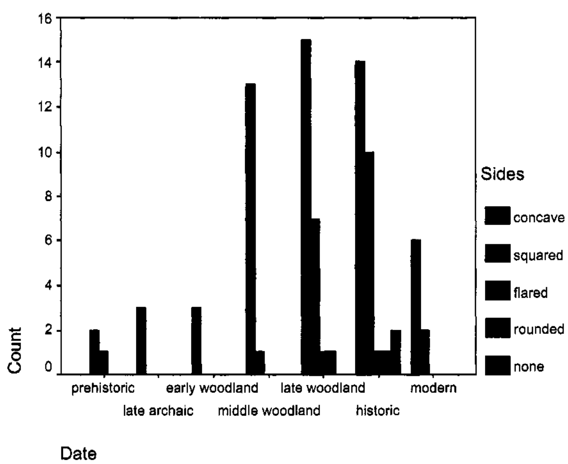
Bottom Shape

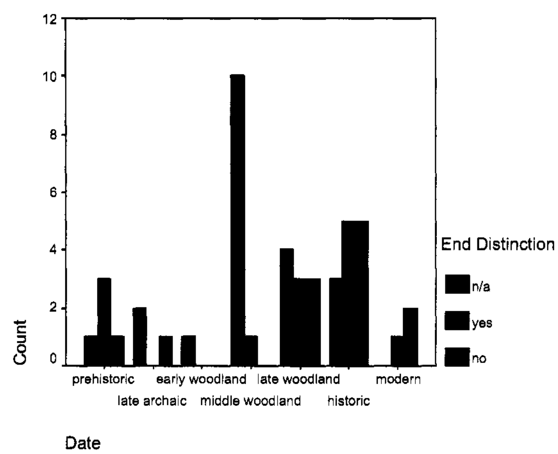
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	C-shaped	15	3.8	13.4	13.4
	U-shaped	65	16.5	58.0	71.4
	squared U-shaped	23	5.8	20.5	92.0
	V-shaped	4	1.0	3.6	95.5
	platform	5	1.3	4.5	100.0
	Total	112	28.4	100.0	
Missing	System	283	71.6		
Total		395	100.0		

Table 12. Bottom shape frequencies.

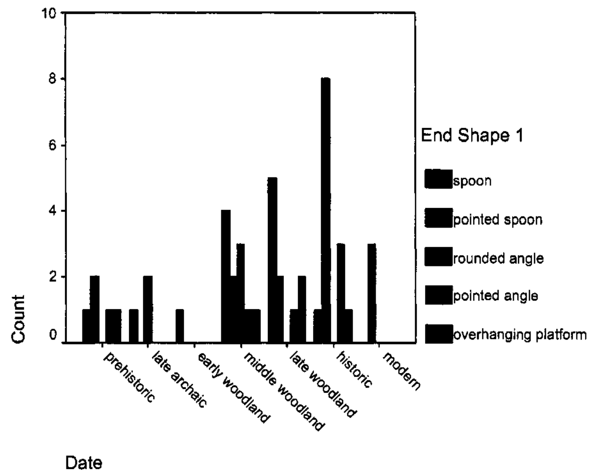
It is interesting to note that the most common wood species is pine. This is surprising since most anecdotal information on logboats from the southeastern United States suggests that the most common wood type is cypress or bald cypress. The other surprising result is that the additional modifications are almost evenly split. Anecdotal information suggests that most logboats have no additional modifications and are simple double-ended vessels. This is also refuted by the different end shapes that are most frequently observed. The straight bottomed, U-shaped hull with concave or squared sides is not unusual.

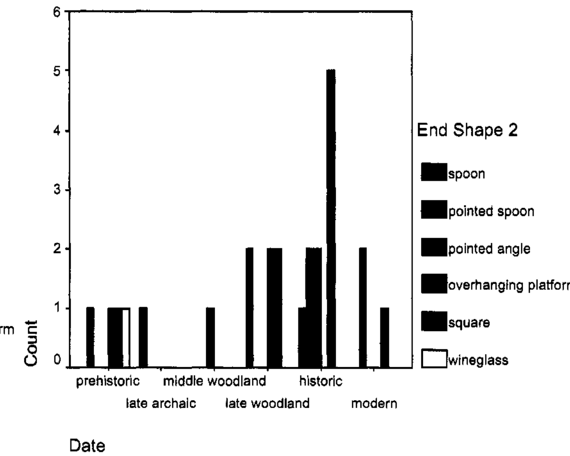
The statistical crosstabs function was also used and the results for the hull form attributes broken down by date are shown in the following figures 29-44.



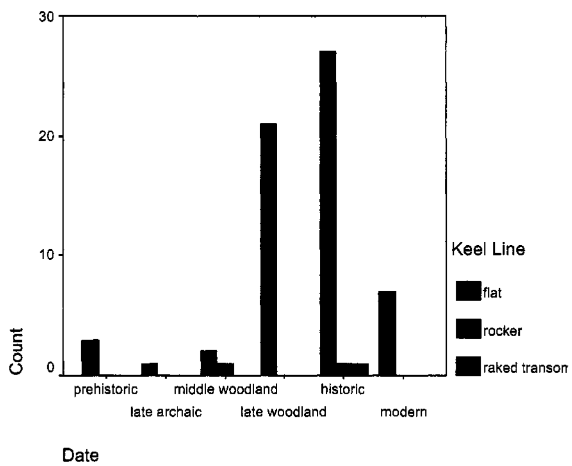


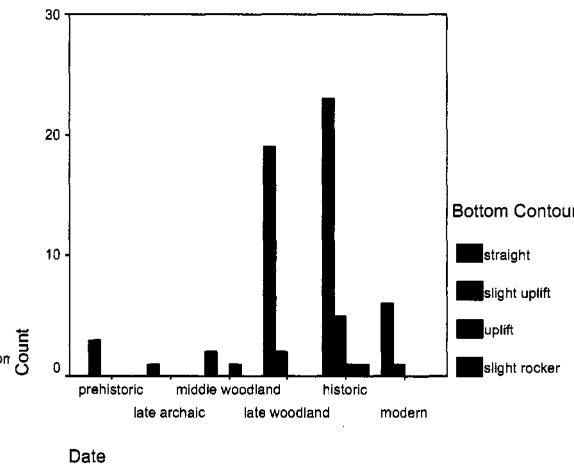
Figures 29 and 30. Distribution of sides and end distinction, respectively, by date.



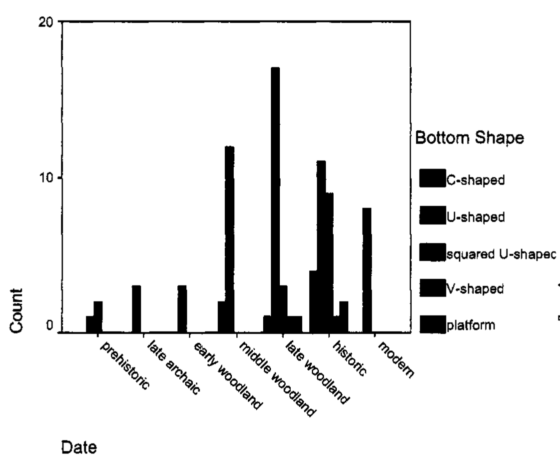


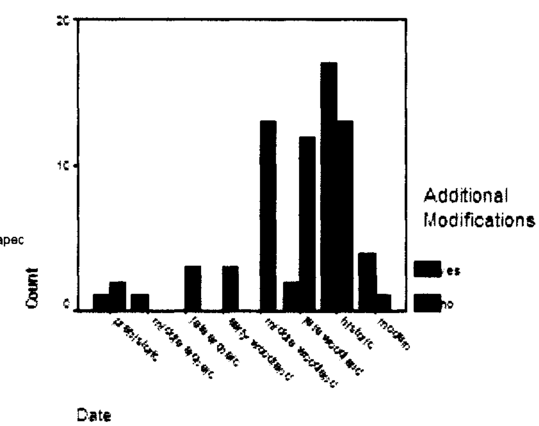
Figures 31 and 32. Graphical distribution of end shape 1 and end shape 2 by date.





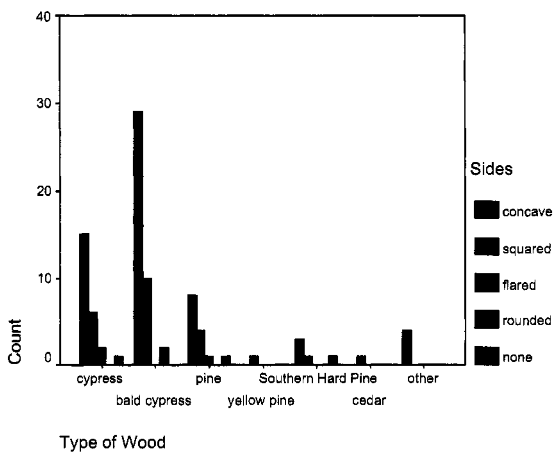
Figures 33 and 34. Graphical distribution of keel line and bottom contour by date.

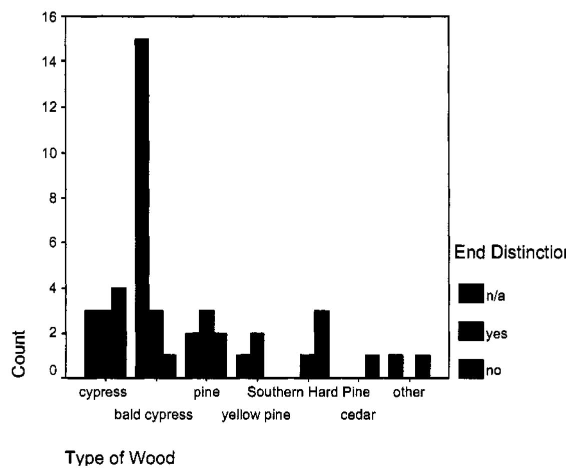




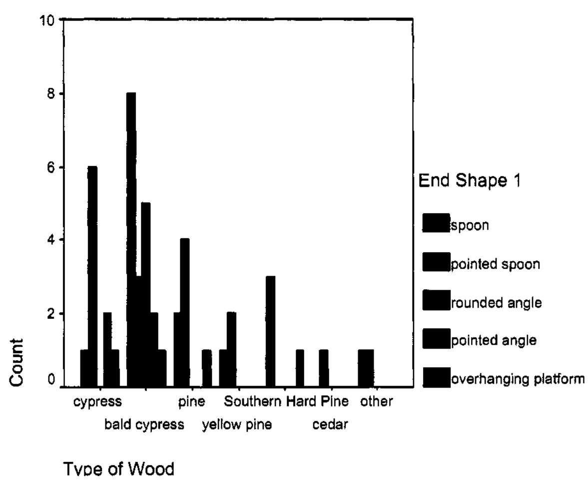
Figures 35 and 36. Graphical distribution of bottom shape and additional modifications by date.

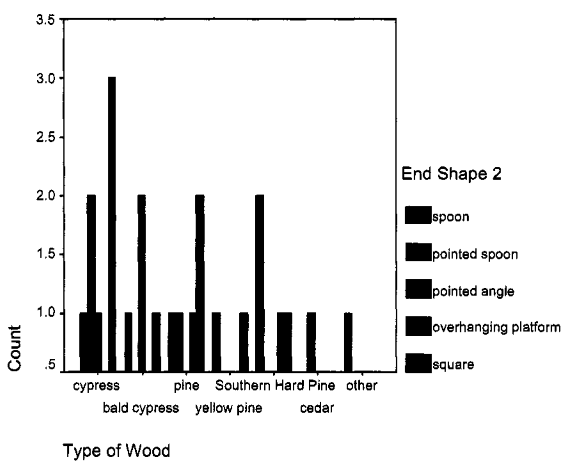
The following figures 37-44 illustrate the hull form attributes broken down by wood type.



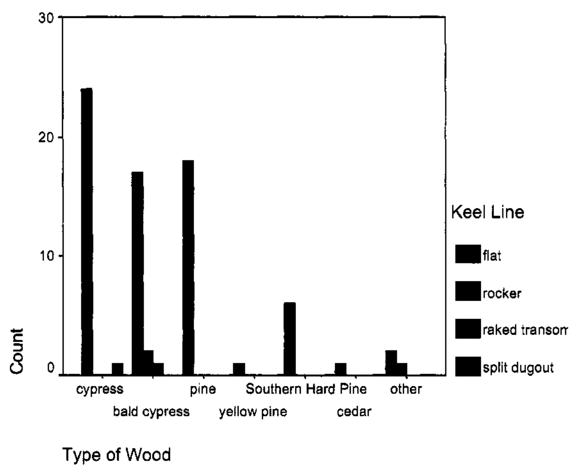


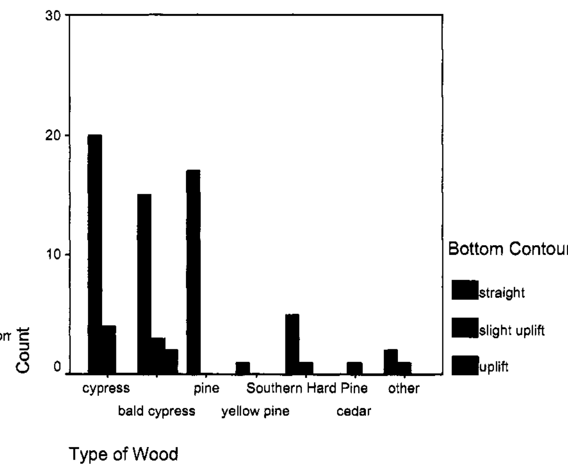
Figures 37 and 38. Graphical distribution of sides and end distinction by wood species.



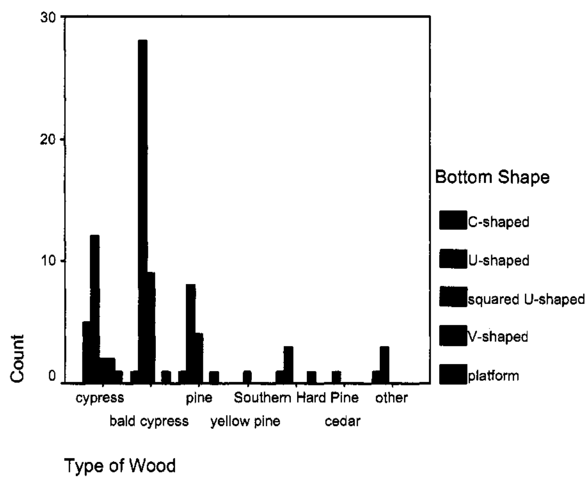


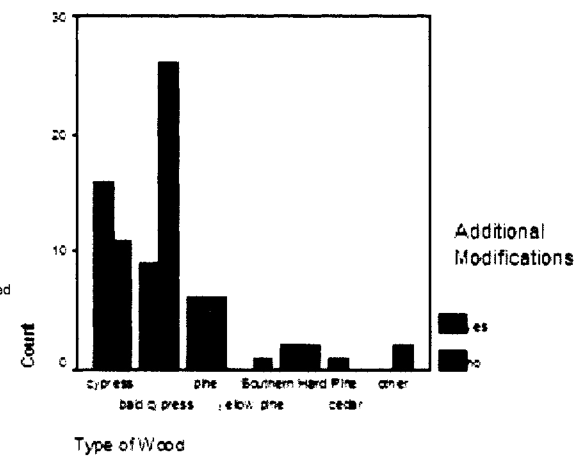
Figures 39 and 40. Graphical distribution of end shape 1 and 2 by wood species.





Figures 41 and 42. Graphical distribution of keel line and bottom contour by species.





Figures 43 and 44. Distribution of bottom shape and additional modifications by species.

The most interesting result is that the prehistoric wood type is pine and the modern wood type is cypress, which may have led to the belief that cypress was always the most popular material for logboats in the southeastern United States. Anecdotal information would have those results inverted so that the most common wood type in the prehistoric era is cypress or bald cypress and the most common species of wood in the historic and modern era is pine. This anecdotal evidence stems from the belief that large stands of cypress were exhausted by the historic period and that pine was the more readily available type of wood.

A cluster analysis with dendrogram and correlations was conducted through SPSS which confirmed certain conclusions and introduced intriguing possibilities. The lack of attributes that have enough data to conduct meaningful statistics is confirmed in the cluster analysis. The data for the speed and handling capabilities needs to be enlarged for the correlations to be tested for significance. The correlations matrix (shown in the tables 13 and 14) shows the positive and negative correlations of the data in the study.

		Block Coef	Bottom Contour	Bottom Shape	Additions	Crew Capacity 40%	Crew Capacity 30%	Date	Hull Mass (kg)	Keel Line	Midships Coef
Block Coef	Pearson Correlation	1	-.341	-.233	-.129	.338*	.448**	-.338	.651**	a	-.197
	Sig. (2-tailed)		.153	.310	.570	.039	.005	.095	.000	.000	.228
	N	39	19	21	23	38	38	26	39	20	39
Bottom Contour	Pearson Correlation	-.341	1	-.187	-.162	.234	.191	.077	-.038	.323**	-.017
	Sig. (2-tailed)	.153		.103	.196	.334	.434	.544	.867	.002	.945
	N	19	92	77	65	19	19	65	22	91	19
Bottom Shape	Pearson Correlation	-.233	-.187	1	.196	.138	.071	.054	.132	-.031	.611**
	Sig. (2-tailed)	.310	.103		.078	.551	.761	.634	.458	.786	.003
	N	21	77	112	82	21	21	81	24	81	21
Additional Modifications	Pearson Correlation	-.129	-.152	.196	1	-.007	-.052	-.329**	.092	-.137	.595**
	Sig. (2-tailed)	.570	.196	.078		.973	.815	.005	.595	.267	.003
	N	23	65	82	105	23	23	72	38	67	23
Crew Capacity 40%	Pearson Correlation	.338*	.234	.138	-.007	1	.969**	-.021	.840**	a	.396*
	Sig. (2-tailed)	.039	.334	.551	.973		.000	.921	.000	.000	.014
	N	38	19	21	23	38	38	25	38	20	38
Crew Capacity 30%	Pearson Correlation	.448**	.191	.071	-.052	.969**	1	-.088	.917**	a	.362*
	Sig. (2-tailed)	.005	.434	.761	.815	.000		.884	.000	.000	.026
	N	38	19	21	23	38	38	25	38	20	38
Date	Pearson Correlation	-.338	.077	.054	-.329**	-.021	-.088	1	.032	.022	.138
	Sig. (2-tailed)	.095	.544	.634	.005	.921	.884		.846	.861	.508
	N	26	65	81	72	25	25	282	39	64	26
Hull Mass (kg)	Pearson Correlation	.651**	-.038	.132	.092	.840**	.917**	.032	1	-.051	.258
	Sig. (2-tailed)	.000	.867	.458	.595	.000	.000	.846		.817	.112
	N	39	22	24	38	38	38	39	52	23	39
Keel Line	Pearson Correlation	a	.323**	-.031	-.137	a	a	.022	-.051	1	a
	Sig. (2-tailed)	.000	.002	.786	.267	.000	.000	.861	.817		.000
	N	20	91	81	67	20	20	64	23	96	20
Midships Coef	Pearson Correlation	-.197	-.017	.611**	.595**	.396*	.362*	.138	.258	a	1
	Sig. (2-tailed)	.228	.945	.003	.003	.014	.026	.508	.112	.000	
	N	39	19	21	23	38	38	26	39	20	39
Sides	Pearson Correlation	-.138	-.017	.305**	.113	.290	.181	.055	.204	.018	.441*
	Sig. (2-tailed)	.390	.884	.000	.304	.230	.407	.620	.233	.883	.035
	N	23	80	111	85	23	23	83	36	84	23
End Distinction	Pearson Correlation	-.747	-.101	.038	-.562**	.483	.310	.210	.271	-.410*	-.555
	Sig. (2-tailed)	.088	.615	.815	.000	.387	.547	.161	.293	.034	.180
	N	6	27	41	42	6	6	46	17	27	6
End Shape 1	Pearson Correlation	.067	.120	.231	.011	-.158	-.140	-.046	.022	.219	-.308
	Sig. (2-tailed)	.900	.552	.146	.944	.765	.789	.761	.934	.273	.552
	N	6	27	41	42	6	6	46	17	27	6
End Shape 2	Pearson Correlation	-.558	-.409	.255	.229	-.037	-.030	-.068	.170	a	-.031
	Sig. (2-tailed)	.442	.074	.259	.306	.963	.970	.729	.745	.000	.969
	N	4	20	21	22	4	4	28	6	20	4
Slenderness Coefficient	Pearson Correlation	.310	-.014	.002	.229*	.058	.146	-.019	.288	-.098	.581**
	Sig. (2-tailed)	.055	.905	.987	.032	.728	.382	.788	.039	.377	.000
	N	39	79	93	88	38	38	200	52	84	39
Type of Wood	Pearson Correlation	.304	.052	-.050	.098	-.178	-.162	-.116	-.116	-.016	-.038
	Sig. (2-tailed)	.060	.662	.644	.391	.285	.332	.093	.404	.896	.816
	N	39	72	88	82	38	38	212	52	74	39
UWL (cm)	Pearson Correlation	.949**	-.105	-.020	.281	.259	.362*	-.255	.955**	.115	-.227
	Sig. (2-tailed)	.000	.641	.905	.095	.116	.025	.115	.000	.600	.166
	N	39	22	34	36	38	38	39	52	23	39
Volumetric Coef	Pearson Correlation	.514**	-.149	-.293	-.604**	-.078	-.062	-.399*	.064	a	-.682**
	Sig. (2-tailed)	.001	.541	.078	.002	.641	.713	.044	.698	.000	.000
	N	39	19	21	23	38	38	26	39	20	39

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

a. Cannot be computed because at least one of the variables is constant.

Table 13. Correlations matrix.

		Sides	End Distinction	End Shape 1	End Shape 2	Slenderness Coefficient	Type of Wood	UWL (cm)	Volumetric Coef
Block Coef	Pearson Correlation	-.188	-.747	.067	-.558	.310	.304	.945**	.514**
	Sig. (2-tailed)	.390	.088	.900	.442	.055	.060	.000	.001
	N	23	6	6	4	39	39	39	39
Bottom Contour	Pearson Correlation	-.017	-.101	.120	-.409	-.014	.052	-.105	-.149
	Sig. (2-tailed)	.884	.615	.552	.074	.905	.662	.641	.541
	N	80	27	27	20	79	72	22	19
Bottom Shape	Pearson Correlation	.805**	.038	.231	.258	.002	-.050	-.022	-.393
	Sig. (2-tailed)	.000	.815	.146	.259	.987	.644	.902	.078
	N	111	41	41	21	93	86	34	21
Additional Modifications	Pearson Correlation	.113	-.562**	.011	.229	.229*	.096	.281	-.604**
	Sig. (2-tailed)	.304	.000	.944	.306	.032	.391	.096	.002
	N	85	42	42	22	88	82	36	23
Crew Capacity 40%	Pearson Correlation	.260	.453	-.158	-.037	.056	-.178	.259	-.078
	Sig. (2-tailed)	.230	.367	.765	.963	.738	.285	.116	.641
	N	23	6	6	4	38	38	38	38
Crew Capacity 30%	Pearson Correlation	.181	.312	-.142	-.030	.146	-.162	.368*	-.062
	Sig. (2-tailed)	.407	.547	.789	.970	.382	.332	.023	.713
	N	23	6	6	4	38	38	38	38
Date	Pearson Correlation	.055	.210	-.046	-.056	-.019	-.116	-.256	-.399*
	Sig. (2-tailed)	.620	.161	.761	.789	.788	.093	.116	.044
	N	83	46	46	25	200	212	39	26
Hull Mass (kg)	Pearson Correlation	.204	.271	.022	.170	.238	-.118	.655**	.064
	Sig. (2-tailed)	.233	.293	.934	.748	.089	.404	.000	.698
	N	36	17	17	6	52	52	52	39
Keel Line	Pearson Correlation	.016	-.410*	.219	.a	-.098	-.016	.115	.a
	Sig. (2-tailed)	.883	.034	.273	.000	.377	.895	.600	.000
	N	84	27	27	20	84	74	23	20
Midships Coef	Pearson Correlation	.441*	-.665	-.308	-.031	.581**	-.038	-.227	-.692**
	Sig. (2-tailed)	.035	.150	.552	.969	.000	.816	.166	.000
	N	23	6	6	4	39	39	39	39
Sides	Pearson Correlation	1	.101	.248	.182	.006	-.006	.090	-.320
	Sig. (2-tailed)		.531	.118	.430	.951	.956	.602	.136
	N	116	41	41	21	97	90	36	23
End Distinction	Pearson Correlation	.101	1	.074	-.626**	-.335*	.269	-.394	.932**
	Sig. (2-tailed)	.531		.535	.000	.016	.070	.118	.007
	N	41	72	72	43	51	46	17	6
End Shape 1	Pearson Correlation	.248	.074	1	.331*	-.034	-.193	.087	.055
	Sig. (2-tailed)	.118	.535		.030	.815	.199	.739	.918
	N	41	72	72	43	51	46	17	6
End Shape 2	Pearson Correlation	.182	-.626**	.331*	1	.062	-.268	.646	.342
	Sig. (2-tailed)	.430	.000	.030		.751	.206	.165	.658
	N	21	43	43	43	29	24	6	4
Slenderness Coefficient	Pearson Correlation	.006	-.335*	-.034	.062	1	.018	.312*	-.454**
	Sig. (2-tailed)	.951	.016	.815	.751		.796	.025	.004
	N	97	51	51	29	265	205	52	39
Type of Wood	Pearson Correlation	-.006	.269	-.193	-.268	.018	1	.323*	.159
	Sig. (2-tailed)	.956	.070	.199	.206	.796		.019	.335
	N	90	46	46	24	205	260	52	39
UWL (cm)	Pearson Correlation	.090	-.394	.087	.646	.312*	.323*	1	.537**
	Sig. (2-tailed)	.602	.118	.739	.165	.025	.019		.000
	N	36	17	17	6	52	52	52	39
Volumetric Coef	Pearson Correlation	-.320	.932**	.055	.342	-.454**	.159	.537**	1
	Sig. (2-tailed)	.136	.007	.918	.658	.004	.335	.000	
	N	23	6	6	4	39	39	39	39

*. Correlation is significant at the 0.05 level (2-tai

**. Correlation is significant at the 0.01 level (2-ta

a. Cannot be computed because at least one of t

Table 14. Correlations matrix

There are positive correlations significant at the 0.01 level between the block coefficient with crew capacity, hull mass, unladen water line, and volumetric coefficient. Because the block coefficient is based on equations that use the unladen water line and hull mass it is expected that the block coefficient correlate. The volumetric coefficient is based on a similar equation as the block coefficient. The bottom contour has a positive correlation significant at the 0.01 level to the keel line, which is also intuitive. The end distinction has a positive correlation to the keel line but at the 0.05 significance level. The bottom shape has a positive correlation, significant at the 0.01 level, to the midships coefficient and the side shape. The correlation to the side shape is expected because the bottom shape and side shape are somewhat determined by each other. For example, it would seem odd to have a flat bottom shape and concave sides, instead, the flat bottom belies the squared sides. Additional modifications are negatively correlated, at the 0.01 significance level, to the date, end distinction, and volumetric coefficient and positively correlated, at the same level, to the midships coefficient and slenderness coefficient. The date is negatively correlated to the additional modifications and volumetric coefficient at the 0.01 significance level. The keel line is positively correlated to the bottom contour at the 0.01 significance level. The midships coefficient is positively correlated to the bottom shape and additional modifications at the 0.01 significance level, and the side shape at the 0.05 significance level. The second end shape is positively correlated to the end distinction at the 0.01 significance level, which is expected because the second end distinction is only present when there is distinction between the two ends. The volumetric coefficient is positively correlated to the end distinction at the 0.01 significance level and negatively correlated to the additional modifications and date at the 0.01 and 0.05 significance levels, respectively.

The data was also entered into the SAS software and an enterprise miner tree (used to predict future outcomes through the available data) created show in figure 45.

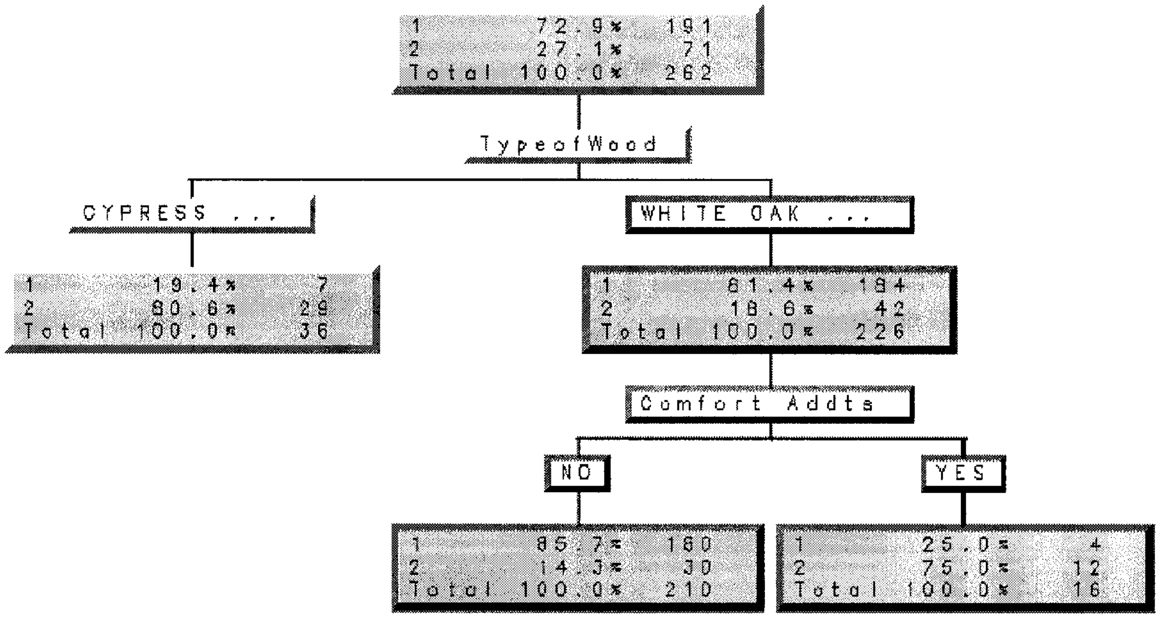


Figure 45. Enterprise miner tree for wood species and additional modifications.

While only 15% of the variations are explained by this tree, the results are interesting for future research. For the wood types cypress, yellow pine, white pine, tupelo gum, cottonwood, corkwood, and cedar, there are 80.6% historic-era vessels and 19.4% prehistoric vessels. For the wood types white oak, bald cypress, pine, gymnospermae, and southern hard pine, there are 18.6% historic vessels and 81.4% prehistoric vessels. Of those vessels, ones without additional modifications are 85.7% prehistoric and 14.3% historic. Of the vessels with additional modifications, 25% are prehistoric and 75% are historic.

Logboat Preservation

The investigation of logboat preservation in different environments constituted the other major research focus. In order to study the preservation of logboats adequately, the researcher must take measurements and photographs before and after the preservation occurs. In an ideal situation, the archaeologist or researcher would record measurements of length, width, height, and thickness and extensively photograph the logboat with a scale, noting any unusual or interesting features. Then the logboat would be preserved or conserved in some way and stored according to the conservation plan. After storage in the particular environment, the logboats would then be re-recorded in the same way as in the initial investigation, taking measurements and photographs. The two sets of measurements and photographs would then be compared to look at the preservation of the logboat. The measurements can help determine if shrinkage or warping of the wood has occurred and the photographs can help determine if the physical structure has changed. Unfortunately, the measurements and photographs are not always recorded when the logboat is discovered and this makes an accurate determination of preservation difficult.

In addition to the measurements and photographs, it is helpful to test the physical degradation and moisture content of the logboat wood. This can require anything from observations on the physical degradation of the vessel's hull and the tactile "mushiness" of the wood, to scientific sampling or the wood for weighing and drying to determine the specific moisture content. Ideally, the researcher would conduct these observations and tests at discovery and after the logboat has been preserved or housed in a particular location. In addition to this, it is important to sample the environment in which the logboats are found in order to approximate a proper reburial environment.

The majority of logboats included in this study were measured and photographed by the author while on display or in storage. Due to this fact, there is a small sample of logboats available that could be investigated both before preservation and some years after preservation. While there are records from the discovery of many logboats, there are not enough measurements and photographs to make an educated judgment of the preservation. The logboat collection from Lake Phelps, North Carolina has the most complete photographs and records.

Lake Phelps, North Carolina

Lake Phelps is fed by rainwater and its waters are usually clear and slightly acidic. The lake has an average depth of four and a half feet and a maximum depth of nine feet. At one time the lake was larger, but over time, drought and pumping to fight fires has lowered the water levels. In addition, the water level in Lake Phelps changes seasonally. In the late summer and early fall the waters are usually lower than during the late spring and early summer (North Carolina Division of Parks and Recreation 2005).

The logboats in Lake Phelps were first discovered by a Pettigrew State Park naturalist and other officials in 1985 when the water levels were very low due to drought and water pumping to fight fires in the area. State archaeologists and park officials found prehistoric potsherds resting on the lake bed, in addition to these logboats (Phelps 2002). Most of the logboats were easily visible in the sediment and were either completely exposed or partially buried in the sediment. When the Underwater Archaeology Branch investigated the site, they recorded measurements and locations (with both a transit and global positioning system, or GPS, although the logboats were later found using these GPS coordinates, not the transit coordinates) of the vessels and took many photographs of the artifacts and surrounding area. These logboats are further categorized into boats that were then removed from the burial environment and professionally conserved, those that were removed from their burial environment and not professionally conserved, and those that were reburied in the burial environment.

Lake Phelps logboats #0001PHL, #0002PHL, #0003PHL, and #0004PHL were removed from the depositional environment and professionally conserved. #0001PHL is housed at the Underwater Archaeology Branch in Kure Beach, North Carolina, #0002PHL is displayed in the Museum of History in Raleigh, North Carolina, and #s0003PHL and 0004PHL are displayed at Pettigrew State Park, North Carolina. Professional conservators treated all four of these logboats with a sucrose solution. The sucrose solution is used as an alternative to the chemical PEG solution often used to conserve large waterlogged wooden objects. Both PEG and sucrose are used to replace the water in the cells of the wood. Different grades of PEG are used depending on the level of degradation in the wood. PEG is graded by molecular weight and a combination of both high and low molecular weights can be used when the wood is severely degraded. Sucrose, on the other hand, can be used to replace the cellular moisture, because it approximates the actions of a low molecular weight PEG. However, sucrose solutions tend to attract various insects and, in concentrations less than 40%, will ferment (Rodgers 2004:34,41). In addition to these four logboats, state archaeologists reburied another 20 logboats in the sediment, leaving them to be covered with the lake water. State archaeologists left the last two logboats in the shoreline, partially exposed. Unfortunately for this study, there is not a group of logboats from Lake Phelps that was recovered from the lake and moved to a new location, but not professionally conserved.

Preservation in Other Sites

Preservation information of other logboats from other locations is also included to supplement the information from Lake Phelps, North Carolina. In these other sites, logboats that were recovered intact and not waterlogged (as opposed to the logboats in Lake Phelps that were waterlogged) are prevalent. In these cases, it is interesting to note the level of preservation of a vessel that was not waterlogged but was cyclically exposed to moisture, either through use where the vessel would be wet and then dried out on shore, or through abandonment exposed to the elements, such as rain and drought. The preservation here is expected to be much higher than if the logboat was salvaged from a waterlogged environment and then allowed to dry out. These logboats provide current measurements and records for the group of logboats removed from the burial or discovery environment and stored, but not professionally conserved.

The large variety of logboats recorded in this study illustrates the many methods practiced in recovering, recording, and curating these artifacts. There are no set of accepted practices in recovering logboats and it is interested to note the approaches each state manager has used in dealing with this cultural resource. In the next chapter, the interpretation of the data collected will provide answers to some questions and help pose further avenues of research on logboats.

CHAPTER 5-INTERPRETATION

Hypothesis Testing Results

The question of what determines logboat form unfortunately cannot be definitively answered with the available data. The environment and available materials does not seem to determine the form of this sample of logboats nor does their form follow any chronological pattern. In the general geographic groups of states, there are multiple cultural groups present throughout the states in different time periods and it was not practical to include geography and cultural affiliation. In regards to the alternate hypotheses, the chronological period and theoretical use of the logboat do not show a statistical correlation to the overall logboat form. It is probable that the logboat form is determined by a combination of both environment and the potential use of the vessel.

According to the correlations matrix, it is apparent that there are a number of interesting possible correlations. Including the 0.01 and 0.05 significance levels, there are positive correlations between the bottom shape and midships coefficient, end distinction and the keel line, additional modifications and the midships coefficient, additional modifications and the slenderness coefficient, and the midships coefficient and the side shape. There are negative correlations, at both significance levels, between the additional modifications and the date, the additional modifications and the end distinction, and the additional modifications and the volume coefficient. These correlations would be interesting to investigate with additional data on each of the coefficients (because not enough data was available to have a large sample size of coefficient data).

The bottom shape and midships coefficient and side shape are not surprising correlations. The midships coefficient refers, in essence, to the shape of the hull, as does the bottom shape and side shape. Therefore, it is understandable that they have a significant correlation. End distinction and keel line is an interesting correlation that should be probed further. End shape and keel line is expected, but perhaps the reason why the distinction between the ends of the vessel has an affect on the keel line is because the keel changes slightly if the ends are different. This is not readily apparent on any of the vessels I personally inspected, but it could be a factor on other vessels. Additional modifications do not have an obvious influence on the midships and slenderness coefficients because most additional modifications refer to the addition of seats and foot braces. However, when additional modifications refer to the addition of a mast and sail, it could very well affect the midships and slenderness coefficients.

From the ANOVA manipulations, the only attributes that do change significantly are the end distinction and shape and the presence or absence of additional modifications. The end shape and end distinction changed through time, the end distinction changed with wood type as well, and the additional modifications changed through time. The additional modifications were much more prevalent in the historic and modern periods, although not unknown in the earlier eras. The end distinction attribute is somewhat unreliable because many of the logboats only had one end intact (referred to as N/A in the statistical analysis). There was no distinction between the bow and stern with logboats made of cypress, southern hard pine, and cedar, and evidence of end distinction with logboats made of pine and yellow pine. There is a distinction in the prehistoric but no end distinction in the modern period. The historic period shows both end distinction and no end distinction and the late archaic, early woodland, middle woodland, and late woodland are predominantly N/A. The most distinct change in end shape is with end shape 2—the square end shape becomes more prevalent beginning with the late woodland period and is the most common second end shape in the historic period. The logboat research conducted at Newnan's Lake in Florida (Wheeler, et al 2003) supports the incidences of end shape change. Wheeler, et al (2003) found that there was enough incidence of end shape change that the authors created a typology based on the various shapes, discussed further in the literature review. The hypothesis that the environment determines the form of the logboat is not supported, and it is likely that the logboat form is influenced by a combination of factors, most likely environment (the available materials and nearness to water) and the function of the logboat.

Preservation and Management

Lake Phelps revisited. In May 2004 a team comprised of the author, state underwater archaeologists Richard Lawrence, Nathan Henry, Chris Southerly, UAB intern Sabryna Sarver, and East Carolina University student David Krop, conducted an investigation in Pettigrew State Park to relocate the logboats recorded in Lake Phelps in 1986. In 1992 a team comprised of underwater state archaeologists, Claude Petrone from the National Geographic Society, and Don Shomette from Nautical Archaeological Associates conducted a ground penetrating radar (GPR) survey to attempt to detect and locate the logboats. Unfortunately, they were not able to find the logboats using the GPS coordinates and GPR. In the 2004 investigation, the team attempted to use the GPS coordinates again and probing rods (and the memory of the underwater archaeologists) from the 1986 examination and had more success in finding the vessels.

The May 2004 water levels in Lake Phelps were significantly higher than in 1986, almost 4 feet deep in 2004 as opposed to inches to a foot in 1986. Due to the higher water levels, the research team used a shallow-bottomed skiff and a portable differential GPS (known as DGPS, it provides more accurate GPS coordinates) to locate the 1986 coordinates. After boating to the coordinates, the team used 5-6 foot long metal poles with handles to gently prod the soft mud to try to locate the logboats. The team found 10 logboats out of the 14 logboats searched for over three days. Unfortunately, the team could not locate the oldest of the logboats (#0007 PHL), thought to be buried in the shoreline of the lake. The team did not take measurements of all of the logboats relocated in Lake Phelps because of time constraints and the original measurements of the logboats from 1986 were not available so a comparison could not be made.

During the relocation, the team uncovered the bow, stern, and midships of Lake Phelps logboat #0013PHL, and the ends and waterline of the remaining vessels. This was done to investigate the preservation of the vessel below the gunwale waterline and because the original investigation did not find the shore-bound end of #0013PHL. The other nine vessels found were traced out to its bow and stern and tactilely evaluated around the gunwale waterline. The structure of the wood of logboat #0013PHL was sturdy and similar to the described structure from 1986. The water was cloudy (due to a strong southwest wind that stirred up bottom sediments) so it was not feasible to take photographs of the logboats relocated and the state of preservation was evaluated by touch. All of the logboats that were found measured the same in length and beam as the original investigation and the preservation was very good. The wood structure was solid and not crumbly or spongy and the waterlines were not eroded.

From this investigation of the 10 vessels relocated, it was apparent that the reburial of the logboats did not adversely affect the physical structure of the vessels. In order to test the moisture content of the vessels, it would have been necessary to take samples of the logboats, which the team did not obtain. This step could be conducted now using the confirmed GPS coordinates. However, it would be helpful if the lake levels were lower or more support equipment was provided for SCUBA operations in order to extract the samples. Instead, the team evaluated the quality of the physical structure of the vessels visually and tactilely. The logboats in the lake seemed to have survived the reburial for almost 20 years without degradation when compared with the notes of the state underwater archaeologists and the photographs from the 1986 investigation.

The preservation of the logboats that state underwater archaeologists and park officials removed from the lake in 1986 and professionally conserved were evaluated by the author through museum research trips. The four vessels are housed in different museums, one in the Museum of History in Raleigh, North Carolina, two at the visitor center in Pettigrew State Park, and the last was broken into 3 pieces and is divided between the Washington, North Carolina Estuarium, the Plymouth Maritime Museum, and the Underwater Archaeology Branch in Kure Beach, North Carolina. The preservation of these vessels was determined visually and tactilely, in the same method as described above, because it was not practical to obtain samples of the logboats that were on display because of museum regulations. Also, if samples were taken of the logboats that were previously treated, their moisture content would only reflect the status of the wood after preservation, not before. The preservation of the professionally conserved logboats depends on the condition of the wood and extent to which it is waterlogged on excavation, the conservation methods used, and the type of environment in which the vessel is stored or exhibited. In this investigation, the level of degradation, and the method of preservation of the logboats that were removed, is assumed to be, for all intents and purposes, similar. This is based on information from the state underwater archaeologists and their staff conservator who aided in the preservation of the vessels and not on samples taken at the time of excavation (Nathan Henry pers. comm. and Richard Lawrence pers. comm.).

Lake Phelps logboat #0002PHL, in the Museum of History in Raleigh, was professionally conserved with sucrose and stored in the museum in an environmentally controlled Plexiglas vitrine (a case for displaying artifacts or specimens) that surrounds the entire vessel. The color of this logboat has changed considerably (the wood has lightened) and there is crystallization of the sucrose on the surface of the hull. The hull itself is not physically changed; there were no abrasions or insect degradation. There was some slight flaking of the outer layer of wood on the gunwales, but other than that, the vessel structurally looks the same as when it was removed. The North Carolina Museum of History is environmentally controlled, but the specific exhibit case that houses #0002PHL, is not. When the logboat was first placed in the exhibit, relative humidity gauges were enclosed in the case behind the vessel. The desired relative humidity level was 55% RH. Desiccants were placed in trays in the bottom of the exhibit case in order to achieve and maintain this level of relative humidity. Subsequently, humidigraphs were placed in the exhibit and data recorded electronically by the conservator, Len Hambleton. John Campbell, Chief, Collections Branch, NCMOH has a log of environmental data recorded in their HOBO system (Billy Oliver, pers. comm..).

Lake Phelps logboats #0003PHL, and #0004PHL in the visitor center of Pettigrew State Park were conserved with sucrose as well. These logboats are housed in a wood and Plexiglas vitrine. There are no environmental controls and the logboats are resting on sand within the vitrine. These logboats also have sucrose crystallization on the hull surface and some abrasion on the gunwales. #0001PHL was broken into three sections when it was removed from Lake Phelps. All three sections were treated with a sucrose solution and are now housed in three different locations. The section housed at the Estuarium has not changed color dramatically and is displayed on brackets on a wall in the museum in a controlled environment. The section housed at the Plymouth Maritime Museum has changed color and exhibits a large amount of crystallization on the hull surface. It is displayed in a support structure (similar to a stretcher) on the floor of the museum. This section is exposed to dramatic environmental changes and has structural damage from insects. The section housed at the Underwater Archaeology Branch in Kure Beach, North Carolina has some color change and sucrose crystallization and is exposed to environmental changes but has not experienced dramatic physical or structural transformations. This fragment is housed on a shelf in the artifact storage area of the UAB complex.

The 2004 team was not able to locate Lake Phelps logboat #0007, the oldest vessel found in the lake in 1986. The team was also unable to locate logboats #0008, #0014, and #0015. It is possible that #0007 was in the lake but had migrated or had been encroached by the shoreline and is therefore either not in the same place it was in 1986 or has been covered by sediment deeper than 4-5 feet. While testing the area of the GPS coordinates, something hard was felt under the sediment (which was very soft) but it was not possible to determine if it was a logboat or a tree root. This logboat, #0007, was relocated in 1992 during the GPR survey and was deemed to be in excellent condition but had migrated from its original position (the report does not state how far). The team could not locate any object under the sediment in the area of the 1986 GPS coordinates for logboats #0008, #0014, and #0015. It is possible the GPS coordinates from 1986 were wrong (GPS accuracy has certainly increased in the past 20 years), although since the majority of the logboats were found with those coordinates, that possibility is unlikely. It is also possible that the vessels have migrated due to sediment movement and water action or that the vessels are buried deeper than the length of the probing poles (which were between four and six feet long). It is also possible that the logboats degraded to the point that their consistency was the same as the surrounding sediment and therefore offered no resistance to the metal probes. This, while a possibility, is unlikely because the preservation of the other logboats was high and the wood did offer substantial resistance to the metal probes. It is also possible that the vessels were vandalized, but because Lake Phelps is inside a state park, it would be difficult to remove an entire logboat from the grounds.

In general, the vessels from Lake Phelps that were reburied in the lake survived better than the ones removed from the lake. This is not to say that the vessels removed did not survive well, but on the whole, the logboats would have survived just as well, albeit unknown to the public, reburied. The fact that some of the logboats recovered and displayed were not housed in a controlled environment added to that conclusion. A climate controlled display environment is key to the survival of treated artifacts. The logboats that experienced crystallization and heavy insect degradation because of the lack of a climate controlled case would have survived as well, if not better, reburied in Lake Phelps. However, if none of the logboats were recovered, the public would not have access to them, and the resource is lost to the wider population. Sucrose was, and still is, considered an acceptable treatment for certain wooden artifacts although there are some issues with this method. These issues include the crystallization of the sucrose on the surface of the artifact when not in a controlled environment (although some PEG weights also have issues with climate control) and the attraction of insects. Fungi and yeasts can also survive in the sucrose solution, even at high concentrations (Hoffmann and Kühn 1998:196). There is also a risk of warping and structural collapse for extremely degraded wood (Hoffmann 1996:657). The same can be said for treatment with polyethylene glycol (PEG). PEG is widely used today for wooden artifacts but it is not successful in certain situations, such as when the humidity is not controlled and the PEG becomes an oily ooze on the surface of the artifact. Although there is a significant cost difference between excavating and conserving the logboats and reburying them, one must consider the trade off involved. If the vessels are reburied, there is no chance of public presentation or education, which may outweigh the cost-benefits of conservation.

Additional collections. Various collections in the southeastern United States contain logboats that were found near or in rivers, lakes, and streams but were not submerged and completely waterlogged. These vessels make up the third category of preservation because they have been recovered from their original location but, in most cases, have not been professionally conserved. This type of logboat includes: the Cottle/Half Moon logboat in the Onslow County Museum, Savannah History Museum logboats #1 and #2, the Funk Heritage Center logboat, and the Charleston Museum Plantation Barge called "Bessie." These vessels, had little if any conservation performed on them and are now housed in museums.

These vessels were not completely waterlogged and usually minimally treated (through consultation with conservators) with oil (usually linseed) to help retain the natural oils of the wood and pesticides to keep any insects at bay. All of these logboats have survived well and were able to go on display almost immediately after acquisition by a museum because they did not require extensive conservation. The Cottle/Half Moon logboat has experienced some preservation issues due to the environment in which it was housed ~~in~~ prior to the Onslow County Museum acquisition. Since the logboat was housed inside the museum it has exhibited only minor preservation issues, such as the outer wood surface flaking. This type of vessel benefits from not being waterlogged since the structure of the wood is not altered by the moisture. These vessels exhibit better preservation than the logboats that were recovered in a waterlogged state and then professionally conserved.

Preservation conclusions. Whether or not archaeologists believe that reburial is an acceptable practice, a larger question still stands: Is reburial worth it? Reburial is a convenient repository, which allows the researcher to study artifacts without having to find a permanent "home" for them after they are excavated. Unfortunately, it also means that the public never has a chance to observe the objects and later research is difficult. Museum displays get the public excited about archaeology, although artifact reconstructions and television and magazine articles are other ways for the public to learn about archaeology. While it is important to study archaeological sites for their historical and archaeological significance inside the scientific community, public involvement is often an important factor in funding the project itself. Lake Phelps is an interesting case since although only a small number of logboats were recovered from the lake and the rest reburied, most people in the community are well aware of the existence of the logboats.

Finding a suitable museum to both display and conserve artifacts can be very difficult because conservation can be time consuming and the museum takes on the responsibility of curating the object into the future. Depending on the artifact, conservation can be expensive as well as lengthy, which poses the question, is conservation and museum display worth it? For some objects that are unique or unusual, the question seems obvious. However, objects that are ubiquitous in the historical record, or modern enough to have building plans, that question becomes more important. In the case of logboats, there are some vessel shapes that are unusual, such as the V-shaped hull in the Onslow County Museum in North Carolina. For vessel types that are common, it may not be as important to recover a whole collection and the Lake Phelps or Newnan's Lake, Florida model may be more appropriate—conserve and display a small number and rebury the rest in the original environment.

Due to the large number of archaeological and historical journals, the scientific community can readily obtain information concerning logboats, but how does the public feel? Archaeology is conducted in part to educate the public on the culture and history of our past and artifacts are what draw the public into the story. Without the objects, the public interest may not be piqued so there must be a balance between the number of boats recovered from a site and the number reburied.

The widespread nature of logboats means that they are often found by passers-by and it is not always possible for an archaeologist to investigate the find. Some states, such as South Carolina and Florida have methods by which an amateur archaeologist can record a find and submit the report to the state for inclusion in the state records. It would be helpful to have a list of essential data when recording logboats. Included below is a working template of data that was important to this investigation and could be included with any temporary permit to investigate this type of vessel. The template is shown in figure 46.

LOGBOAT RECORDING FORM

LOCATION
City_______________________State_________County___________________
GPS Coordinates________________Site Transit Coordinates_______________
General location found (i.e. name of lake or river)______________________
Site Number______________Current Location__________________________
Date discovered__________Date recorded___________Recorded by__________
Contact information____
Canoe number_________Artifact number_________Accession number__________
ENVIRONMENTAL DATA
Sediment type______________Munsell____________Sample taken (circle) Y/N
Water temp (°F/°C)______________Water pH_________Sample taken (circle) Y/N
Water depth(high tide)_____(low tide)_____Sediment depth(to top of canoe)________
LOGBOAT DATA
Describe preservation____
Description (include method of manufacture, associated artifacts, stem/stern form etc.___
____
____
____
____
Length (m)________Average beam________Midship height(base to sheer)________
Length b/w perpendiculars______Maximum beam_______Length:beam ratio________
Hull thickness at gunwales amidships__________Bottom thickness amidship_________
Hull thickness-stem________Hull thickness-stern__________(where stem/stern is clear)
Bottom contour: Flat______Arched______Other (describe)___________________
Keel line:Straight___Slight uplift___Moderate rocker___Extreme rocker___Other______
Sides: Concave_______Straight________Flared_______
Girth: Stem (End A)________Stern (End B)_________(measure at max. circumference)
Radiocarbon date_____________Wood species__________Wood density__________
PRESERVATION COMPARISION
Compared to previous photographs (if available) the canoe is: (check all that apply)
Largely intact (75%-100%)______Eroded (50%-75%)______Fragmentary (<50%)_____
Describe any biological deterioration (i.e. worm damage, fungus, etc.)______________
____
____
____
Describe any physical deterioration (i.e. erosion)___________________________
____
____

INSTRUCTIONS
Fill out as much of the form as possible. Sketch dugout on back of the form, including a plan view, profile, and at least two cross-sections, and a scale). Photograph profile of vessel, details of any degradation/erosion, details of each end, and details of any unique features or marks.

Figure 46. Logboat recording form.

Public interpretation. Another way to interest the public in archaeology is to conduct exhibits of experimental archaeology, such as the Periauger Project at the North Carolina Maritime Museum. A periauger is an extended logboat constructed out of two or more single logboat hulls joined together by a keel. This vessel typically has one or two masts and can be propelled under both sail and oar (Fleetwood 1995:38). Unfortunately there ~~is~~ are no existing periaugers, which is why the Periauger Project began their attempt to reconstruct this type of vessel. In this case, because there was not physical evidence of the periauger vessel, the project team, through documentary research, created building plans for a theoretical periauger. The team first built a model of the vessel and then the vessel itself from those plans, the vessel is shown in figure 47.

Figure 47. A view of the reconstructed periauger, *Periauger*, on the trip to Hertford, North Carolina. Courtesy The Periauger Project.

The team upon completion sailed it from Beaufort, North Carolina to Hertford, North Carolina to conduct sailing, rowing, and stability tests. This project garnered a great deal of public support and interest in the periauger benefited North Carolina archaeology as well. Experimental archaeology is a very successful method of maritime research that is also fun for the public. This type of archaeology does not replace field research, rather, it augments it and helps gain public attention.

CHAPTER 6-CONCLUSION

Significance

The question of logboat form has not been discussed in print in a regional perspective prior to this investigation. While it was generally assumed that logboats were too rudimentary a vessel to have significant changes in form, especially in the prehistoric period. However, it appears that additional modifications and some changes in form (especially in the end shape and additional modifications) existed at that time. But what factors affect the form of southeastern United States logboats? The factors considered were environment and available materials, geography, and chronology. The initial hypothesis was that the environment and available materials ~~affects~~ the form of logboats because the available logs and the environment in which the logboats is used seemed the most reasonable explanation for change in form based on the literature review. The alternative hypotheses were that the geography and cultural affiliation of the builder determined the logboat form and that the form changed thru time.

Through statistical analysis of various logboat attributes it was determined that the logboat body form did not drastically change, but the end shape did change according to wood type and time period. The logboat change in form over time could be influenced by the introduction of European methods and tools for boat building, however, most of the attributes are seen, at least minimally, throughout all time periods considered. Some logboats made with stone tools and fire look very similar to logboats made with iron tools. While the statistical analysis was not conclusive, the research itself was important as a beginning point for future research into logboat form. Using this research as a basis, it will be far easier for data to be added to this typology and the data set expanded so that more advanced statistical analysis is possible. The investigation dispelled much of the anecdotal evidence on logboats—most notably, the most prevalent wood species and the advances in additional modifications, and the idea that logboats necessarily "advanced" over time. Through researching, the general conclusions arrived at are that while statistically, form is not specifically determined by environment, it seems that logboat form is determined by a combination of both environment and the intended function of the vessel. Even with additional data, the determination of what influences the form should be the same—that a combination of both the available materials, nearness to water, and what the logboat is used for influences the form.

Future Research

Future researchers should first focus on increasing the information on the current sample to include all of the necessary measurements and physical characteristics for all of the logboats. It would also be helpful to increase the sample size of logboats and extend the sample size to include inland logboats from other, regions, specifically other areas of the United States, South America, and Canada. In addition increasing the body of information and the sample itself, would be interesting to test the end shape typology on a larger scale, extending the work here and the research of Wheeler, et al (2003) to include both inland logboats and ocean-going vessels. This comparison would be useful to compare the forms of the end shapes over a broad range of logboats.

It would also be useful to further investigate cultural affiliation and how it relates to logboat form, although it is probably that geographic distribution is the best one could achieve. While it is difficult to attribute a prehistoric or historic logboat found without any identifying artifacts or marks, there are logboats identified with particular tribes, especially in ocean-going logboats. It would be interesting to research possible cultural affiliation of inland vessels where available. Even as a theoretical study, one could investigate the history of tribal groups in states and test for any correlation to logboat form. In particular to Lake Phelps, North Carolina and Newnan's Lake, Florida, it would be interesting to study the pattern of burial and abandonment of the logboats. In Lake Phelps, in particular, the logboats are arranged regularly throughout one side of the lake, which raises the issue of exploring the other side of the lake as well, or determining why the logboats are only found on one side of the lake (could be cultural, prevailing winds and currents, or just that the other side has not been well-explored).

It would also be particularly helpful to collect ethnographic information on logboats around the world and compare the results with archaeological finds. The logboats in Ossowski's book (1999) bear a striking resemblance to logboats in the Southeastern United States. Expanding the comparison of worldwide logboats on both an ethnographic and archaeological basis is a compelling avenue of future research.

Studying the differences between inland and oceangoing logboats would also be a valid avenue of research. Large oceangoing logboats are found throughout the world, but there are large concentrations in the Pacific Northwest of the United States and Pacific Southwest coast of Canada that could be compared to inland logboats in the United States. Comparing the oceangoing logboats of the United States to oceangoing logboats of other countries would provide data on the regional differences and similarities of the vessels.

Researchers should not limit themselves merely to statistical research. Experimental archaeology is widely conducted in other countries and to a limited extent in the United States. Reconstructing one of these logboats would be helpful in understanding both how the vessels were made and how they handled in the water. They are doing this at Jamestown One such example of experimental archaeology in the United States is the Periauger Project conducted with the joint partnership of the Perquimans County Restoration Association, the North Carolina Maritime Museum, and the East Carolina University Program in Maritime Studies. The team built a replica of a periauger based on documentary evidence (no archaeological evidence of a periauger exists) and tested the capabilities of the vessel in the water. This type of research is important for rare vessels, but also for unusual vessels such as the Lake Phelps logboat that has a bend in the middle (#0011PHL) and the drastically V-shaped logboat in the Onslow County Museum.

Last, but not least, it is important to further investigate the capabilities of reburial and the preservation of logboats. Additional research on reburial would aid a variety of archaeological research, not merely for logboats. Preservation issues abound in all of archaeology, and it would be useful to study the long-term planning in regards to the continued preservation of logboats. This could include the efficacy of reburial, other forms of passive conservation, and forms of active conservation, including, but not limited to, sucrose and PEG. The recent field work conducted at Lake Phelps illustrates that it is possible to rebury logboats and maintain an acceptable level of preservation. This high level of preservation is most likely due to both the chemistry of Lake Phelps itself and the general efficacy of reburial as a method of passive conservation. In general (but not in all cases) it is appropriate to rebury logboats when the vessel is completely wooden with no iron additions, when the original burial environment is available (i.e. at Lake Phelps the logboats were reburied in similar locations to where they were found originally), when the pH of the water is slightly acidic (but not highly acidic) and is fresh (i.e. not saline). These conditions were all present in the vessels in Lake Phelps and may aid in the preservation of these vessels.

This investigation has shown that certain long-held beliefs that prehistoric logboats were less technologically advanced are incorrect and that the question of logboat form is not easily answered. It appears that there is no one specific attribute that determines the logboat form and it is most likely a combination of attributes that co-exist to achieve the vessel morphology seen today. The probable combination of factors that influence form are both environment and the planned function of the logboat. The next obvious avenue of research is to investigate whether the function of the logboat is associated with the form and identifying a reliable method of attributing a function to a specific vessel type. This is because the it is possible the vessel would need to be modified to the specific function (i.e. adding an outrigger for offshore fishing or lowering the draft for shallow near-shore travel). The function of many modern vessels (such as ice breaker, barges, and submarines) determines their form, so it may be that the same is true for the logboat as well.

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APPENDIX-LOGBOAT DATA

Logboat Data

Publication (Author, Year)	Canoe Name/#	Length	M. Depth	M. Height	Max. Beam	Gunwhale Thick	Hull Thickness
Brose and Greber, 1982	Ringler	6.9 m	36 cm	60 cm	1.1m		10cm
Alford, 1992	Doodle	4.25m	26.7 cm		78.7 cm		2.85 cm
	Unnamed	4.4 m			1m		
	Bridgeton hull	7.6 m			1.8m		
Carter, et al, 1982	Uniacke Lake, Nova Scotia	4.8 m	30 cm		62 cm		2 cm
Barnett, 1984	Homochitto River Canoe #2, MS	4.9 m	49 cm		65 cm		
	MS Delta Area; OCM	4.95 m	25 cm		60 cm		
	Picayune, MS	5.5 m	27 cm		96 cm		
Pittman and Lipe, 1972	Black Lake, Elizabethtown, NC	3m	30.5 cm		66 cm		5 cm
Wheeler, et al, 2003	Newnan's Lake:						
	1	3.87 m			39 cm		
	2	6.75 m			55 cm		
	3	3.95 m			46 cm		
	4	6.65 m			30 cm		
	5	1.44 m			40 cm		
	6	5.06 m			50 cm		
	7	6.53 m			41 cm		
	8	6.25 m			49 cm		
	9	4.74 m			45 cm		
	10	6.92 m			52 cm		
	11	4.42 m			40 cm		
	12	8.19 m			45 cm		
	13	5.06 m			44 cm		
	14	5 m			55 cm		
	15	6.5 m	15 cm	25 cm	55 cm		
	16	7.68 m	15 cm	30 cm	60 cm		
	17	7.02 m	20 cm	29 cm	66 cm		
	18	6.2 m			60 cm		
	19	8.6 m			60 cm		
	20	7.05 m			69 cm		
	21	1.75 m					
	22	9.5 m			65 cm		
	23	7.7 m			75 cm		
	24	8 m			92 cm		
	25	7.22 m	20 cm	30 cm	72 cm		
	26	7.14 m			65 cm		
	27	7.19 m			64 cm		
	28	5.15 m	20 cm	30 cm	59 cm		
	29	6.05 m			54 cm		
	30	7.6 m			65 cm		
	31	5.7 m					
	32	7 m			67 cm		
	33						
	34	7.2 m			60 cm		
	35	7.6 m			67 cm		
	36	6.2 m			65 cm		
	43	4.57 m			50 cm		
	45	1.2 m		6 cm	30 cm		
	49	5.7 m			62 cm		

Publication (Author, Year)	Canoe Name/#	Length	M. Depth	M. Height	Max. Beam	Gunwhale Thick	Hull Thickness
	54	4.6 m			59 cm		
	55	7.48 m			59 cm		
	61	7.73 m			54 cm		
	70	1.1 m			42 cm		
	71	45 cm			20 cm		
	72	7.8 m			50 cm		
	73	7.29 m			56 cm		
	74						
	76	6.6 m			64 cm		
	77	6.3 m					
	78				43 cm		
	79	5.4 m			65 cm		
	80	6.55 m			53 cm		
	81				47 cm		
	95				30 cm		
	DeLeon Springs 2						
	DeLeon Springs 1				42 cm		
	Lake Galilee 5	4.27 m			39 cm		
	Harney Flats Canoe (FL)						
	Davis Florahome 4	4 m					
	Lake Monroe						
	Stricklin 17	4.08 m			42 cm		
	Lake Louisa 1	5.7 m			53 cm		
	Lake Louisa 2						
	IMC 1						
	Lakeland	5.8 m		25cm	68 cm		
	Davis Florahome 5						
Wendy Weaver, email	Altamaha, GA canoe	3.6 m	40 cm	42 cm	45 cm	1.5 cm	2 cm
	farmer watering trough	3.81 m			50.9 cm	3.2 cm	
Jo Miles-Seeley, 1995	Swan Lake Canoe (Mississippi)	7.62 m	31 cm	35 cm	67.5cm/ex71cm	1.5 cm	4 cm
Noel R. Stowe, 1974	Gulf Coast Canoe #1(Mobile, AL)	6.13 m	24 cm		0.5 m	6.35 cm	
	Gulf Coast Canoe #2 (Van Cleave, MS)	4.9 m	24 cm		85 cm	3.05 cm	
	Gulf Coast Canoe #3 (Cedar Creek, MS)	3.03 m	21 cm		43 cm	6.1 cm	
	Gulf Coast Canoe #4(Pascagoula, MS)	4.6 m	24 cm		46 cm	3.05 cm	
Sam McGahey, 1986 (All MS)	Homochitto Canoe #1	4.2m to break		0.47m	0.30m		
	Georgetown Canoe (Pearl River, MS)	5.44m		0.35m	0.55m	~12mm	1 cm
	Shubuta Canoe (Chickasawhay River, MS)	4.51m			0.49m		
	Malone Lake Canoe	7.3m			0.40m		
	East Pearl Canoe #1 (Pearl River, MS)	5.94m		0.61m	0.72m		
	Steele Bayou Canoe	2.63m	0.32m		0.44m		
	Linday Canoe (Tombigbee River, MS)						
	Pascagoula River Canoe #1						
	Greenwood Canoe (Tallahatchi River, MS)	11.4m		0.21m	0.6m		
Anne Marie Plane, 1991 (MA)	Weymouth Great Pond logboat	3.185m		29.9cm	68.6cm width		
	Hopkinton logboat (Jo-Sylvia Lake, MA)	4.39m		39.4cm	58.4cm width	1cm to 3.8cm	7.6cm
Allen R. Saltus (MS & LA)	"Keel" Pascagoula River canoe, MS	5.5 m	46 cm	61 cm	137.2 cm	7.62 cm	10.16 cm
	Carolina Bluff Canoe (Red River, LA)	7.62 m	33 cm	39 cm	73.7 cm	5.08 cm	5.08 cm
Mark Joseph Hartmann, 1996	DeLeon I (Florida)	2.74m	0.10m		0.38m	2 cm	
	DeLeon II (Florida)	3.35m			0.48m		
	Lake Galilee 4 (Florida)	4.47m		0.213m	0.457m	6 cm	12 cm

Publication (Author, Year)	Canoe Name/#	Length	M. Depth	M. Height	Max. Beam	Gunwhale Thick	Hull Thickness
	Florahome 4 (FL)	4.32m		0.20m	0.65m		
	Stricklin 18 (FL)	4.08m			0.42m		
	Lakeland (IMC)						
	Swisher (Putnam County, FL)	5.57m		0.36m	0.40m	5cm	3cm
	Cowpen Lake	5.58m incomp.		30cm	41cm		
	Magnolia Lake	6.43m			0.38m		
	Dog Island	5.3m			0.58m		
	Tucker Lake 2	5.4m	0.15m		0.43m		
	Zellwood I	4.7m largest			0.43m largest		
	Hampton Lake I	6.3m					
	Loch Low Lake Canoe (FL)	6.67m			0.33m		
	Wildent Lake	6.85 m		21-27 cm			
	Little Shady Lake	4.25m		0.33m			
	Lake Kissimmee	68 cm frag			0.39m		
	Pine Lakes	4.08 m			0.37m stem		
	Little Orange Lake 3	4.2m		43 cm	54 cm		
	Red River (LA)	9.355m		45 cm	58cm	8 cm	15 cm
	Silver River (FL)	4.4m		46 cm		6cm	
	Tucker Lake 4	1.12m frag		45 cm	38 cm	5cm	
	Micanopy 2	4.5m			35 cm	3cm	
	Long Pond	4.10 m	23 cm	47cm	42 cm		10 cm
	Suwannee 3	6.0m		59 cm	78.5cm		
	Goose Lake 3	5.4m	28 cm	36cm	65.5 cm		
	Lake Griffin 3	68 cm frag			25 cm frag		
	Grandin	4.9 m		30 cm inc.	40.5 cm	2cm	4cm
	Micanopy 1	4.25 m			38 cm	2.5 cm	
	Little Orange Lake 2	3.5m	23 cm	46 cm	58 cm	3 cm	11cm
	Stricklin 14 (FL)	4.3m			0.44m		
	Fluker's Bluff (LA)	3.81m		0.178m	0.457m		2.54cm
	Grassy Lake (FL)	5.1m		0.36m	0.36m		
	Keuka Lake (FL)	4.6m			0.34m		
	Hartman Lake (FL)	3.84 m			0.40m		
	Stricklin 10 (FL)						
	Georges Lake 2 (FL)	1.62m frag	21 cm	43 cm	50cm		
	Tombigbee I (AL)	6.1m		0.24m	0.24m/e.48m	1 cm	
	Goose Lake 2 (FL)	5.878 m		22 cm	60cm		
	Tucker Lake I (FL)	5.09 m		31 cm	39 cm		18 cm
	Hull Lake I (FL)	4.24 m		35 cm	25 cm		
	Goose Lake 5 (FL)						
	Suwannee River 2 (FL)	6.4m		41 cm	61 cm		8 cm
	Crooked Lake 3 (FL)						
	Hancock Lake (FL)						
	Lake Salvador 2 (LA) 16SC49	8.33m			61 cm	5 cm	
	Stricklin 4 (FL)	5.95 m		32 cm	57 cm		
	Texas Memorial Museum (TX)	4.4 m		40 cm	80 cm	4cm	10 cm
	High Springs Canoe (FL)	8.7m		43 cm	48 cm		14 cm
	Econonfina Creek Canoe (FL)						
	Hampton Lake I Canoe	6.3m					
	Lake Washington Canoe (FL)	6.29m					
	Fort Lauderdale Canoe (FL)	4.05m		60cm	60cm		

Publication (Author, Year)	Canoe Name/#	Length	M. Depth	M. Height	Max. Beam	Gunwhale Thick	Hull Thickness
	Lake Inverness Canoe (FL)	3.86m		22.9-30.2cm	40.6-43.2cm		
	Brooklyn Lake Canoe (FL)	3.78m		30cm	46cm		
	Seminole Lake Canoe 2 (FL)						
	Dade County Canoe (FL)						
	Etheridge Canoe (FL)	3.25m		32 cm	59cm		
	Pensacola Canoe (FL)	2.10m			75 cm		
	Carrabelle/Dog Island Canoe (FL)	5.3m			53 cm		
	"Hatian Canoe" Gasden Co., FL	6.83m		40cm	65-70cm		
	Lake Wimico Canoe (FL)	15m		67.5cm	60 cm		
	Silver Lake Canoe (FL)						
	Nautta Rise Canoe (FL)	3.2m		37.5 cm	70 cm		
	Crows Bluff Canoe (FL)	4.83 m					
	Lee County Canoe (FL)						
	Waccasassa River Canoe (FL)		75 cm		1.28m		
	Delancy Canoe (FL)	3.76m			48 cm	5-7cm	
	Jupiter Island Canoe (FL)						
	Grassy Key Canoe (FL)	.92-1.3m bow			50 cm	3cm	
	Lake Apopka 1 (FL)						
	Zellwood Frags 2	1.22 m			61 cm		
	Zellwood Frag 3						
	Lake Preston Canoe (FL)	4.2 m		23 cm	47.5 cm		
	St. Petersburg Canoe (FL)	4.88m	35 cm	40 cm	72 cm		5 cm
	Crooked Lake Canoe 1 (FL)	4.03m		18 cm	39 cm		
	Florida Rock Canoe (FL)	3.22 m			41.91 cm		
	Adams Ranch Canoe (FL)						
	Escambia Bay Canoe (FL)						
	Hillary Peat Canoe (FL)						
	Suwannee River Canoe Bottm&end frag	9 m					
	Daytona Beach/Orange City Canoe (FL)	5.9m		37 cm	40 cm		
	Albany Canoe (FL)	3.04 m					
	Cumberland Canoe (FL)	3.04 m		43 cm			4 cm
	Pridgen Canoe (Bladen Co. NC)	1.27 m frag					
	Battery Island Canoe (NC) 0079CFR	1.53 m frag	30 cm	35 cm	40 cm	3.81 cm	5.08 cm
	Waccamaw Canoe #1 (NC)	3.82 m		26.52 cm	30.5 cm inc.		11cm
	Tyson Canoe #1 (NC-Cape Fear Mus)	3.66 m		30.5 cm	60.96 cm	3.81 cm	5.08 cm
	Manteo Marine Resources Center Canoe	2.5 m frag		43 cm	81.4 cm		7.62 cm
	Goodwind Canoe (Carolina Beach Inlet, NC)						
Hartmann plus my own research	Cottle Half Moon (Onslow Co. Canoe NC)	11.7 m		86.36 cm	88.9 cm	5.08 cm	
	Valenti Canoe (NC) Lumber River 0001LUR	5m		30 cm	46 cm	3.2 cm	5.08 cm
	Lake Phelps Canoe #1 0001PHL	3.9 m		20.32 cm	60.96 cm		5.08 cm
	Lake Phelps 30ft 0002PHL	9.144 m		40.64 cm	68.58 cm	2.54 cm	6.35 cm
	Lake Phelps; Butler Canoe 0003PHL	3.6 m		25 cm	50 cm	2.5-5 cm	5-10 cm
	Lake Phelps; Pond Canoe 0004 PHL	4.7 m		23 cm	60 cm	5 cm	7-15 cm
	Lake Phelps #5	8.53 m		30 cm	50.8 cm	2.5-5 cm	5-15 cm
	Lake Phelps #6	6.5 m		12 cm	48.3 cm	3-5 cm	12-17 cm
	Lake Phelps #7	9.144 m frag		25 cm	76.2 cm		10-15 cm
	Lake Phelps #8	7.92 m		20 cm	60 cm	5-10 cm	15-20 cm
	Lake Phelps #9	1.8 m				5-7 cm	10 cm
	Lake Phelps #10	5.5 m		30 cm	60 cm	1.5 cm	10-20 cm
	Lake Phelps #11	7.5m		25 cm	50 cm	10-15 cm	10-20 cm

Publication (Author, Year)	Canoe Name/#	Length	M. Depth	M. Height	Max. Beam	Gunwhale Thick	Hull Thickness
	Lake Phelps #12						
	Lake Phelps #13	6.64m		60 cm	55 cm	2-5 cm	10 cm
	Lake Phelps #14						
	Lake Phelps #15	6.25 m		15 cm	40 cm	5 cm	10 cm
	Lake Phelps #16	8.1 m		13 cm	55 cm	2-5 cm	5-10 cm
	Lake Phelps #17	4.8 m		20 cm	68 cm	2-5 cm	12-15 cm
	Lake Phelps #18	10.31 m		25 cm	45 cm	2-5 cm	10 cm
	Lake Phelps #19	9.6 m		22 cm	55 cm	5 cm	12 cm
	Lake Phelps #20	8.3 m		19 cm	35 cm	2-5 cm	5 cm
	Lake Phelps #21	3.9 m		25 cm	45 cm	2-5 cm	10-12 cm
	Lake Phelps #22	4.7 m			47.5 cm	2.5 cm	3 cm
	Swartz's Dog Pen Canoe Lake Phelps 0025PHL	5.2 m			60.96 cm		
The Mariner's Museum Research	BF26 Haida Nation, Queen Charlotte Is.	14.2 m			1.45 m		
	BU51 Powhatan Creek, VA	8.1 m	50.8 cm		64.8 cm	3.2 cm	6.35 cm
	BU 37 Lake Michigan	4.62 m	22.86 cm		52.07 cm		
	BU 16 Lake Champlain, NY-VT	4.88 m			45.72 cm		
	BU 6 Cayuga Lake, NY(log) used in CT	8.2 m			1.02 m		
	BU 14 Dismal Swamp;used on Lake Drummond	5.4 m		36.83 cm	71.1 cm		
	BF 24 La Conner, WA	16 m			91.44 cm	1.9 cm	
	BU 13 Pearl River, LA	1.8 m	29.21 cm		72.4 cm	2.38 cm	
	#125 Blackwater, VA (disintigrated, missing)	3.81 m			66 cm		
	BU 8 Pith-lo FL Everglades	7.95 m	24.8 cm		65.41 cm	1.27 cm	
North Carolina UAB records	Webber Canoe, Pamlico River 0030PMR	4.8 m		68.6 cm	86.3 cm		
	Elwell's Ferry Canoe NW Cape Fear River	4.44 m		35.3 cm	71 cm		
	Futch Creek Canoe 0001MDS	5.6 m		25.3 cm	45.72 cm		
	Waccamaw Canoe #3 0003WAL	5.8 m			60.96 cm		
	Coinjock Canoe 0001COS						
	Batson Canoe Topsail Sound 0001TPS						
	Carter Canoe, North Landing River 0001NLR	3.83 m		43 cm	58.2 cm		
	Lower Little River Canoe 0071CFR	4.1 m		32.9 cm	45.72 cm		
	Ruffin Canoe, Tar River, Edgecombe 0016TRR	5.69 m		32.9 cm	53.34 cm		
	#1-1905 White Lake 0001WHL	1.83 m frag		48.16 cm	63.4 cm		
	#2-1906 Singletary lake 0002WHL	91.44 cm		30.48 cm	53.34 cm		
	#3-1907 Singletary lake 0003WHL	1.42 m frag		32.9 cm	48.16 cm		
	#4-1908 White Lake 0004WHL	1.4 m frag		38.1 cm	49.7 cm		
	Pridgen Canoe fragment White Lake 0006WHL	1.3 m frag		38.1 cm	43 cm		
	Fayetteville Road canoe white Lake 0007WHL	1.37 m frag		30.48 cm	45.72 cm	3.81 cm	5.08 cm
	Carolyn Tanner Canoe White Lake 0008WHL	1.83 m frag		30.48 cm	50.6 cm	3.81 cm	3.81 cm
	Mary Shaw Canoe White Lake 0009WHL	1.83 m +		20.1 cm	50.6 cm	3.81 cm	3.81 cm
	Big Jim Canoe White Lake 0010WHL	5.5 m			45.72 cm	2.54 cm	1.91 cm
	Linton Canoe; Lake Waccamaw 0002WAL						
	Jasper Davis Canoe;Tar River RckyMtMillsDam						
	Shrimp Net Canoe, 0080CFR	40.64 cm frag		30.48 cm	40.64 cm		
	Tyson Canoe #2, Gray's Creek 0069CFR	2.44 m frag		20.32 cm	50.8 cm	2.54 cm	3.81 cm
	Black Lake Canoe #1; 0001BKL	3.8 m		35.66 cm	60.96 cm		
	Black Lake Canoe #2; 0002BKL	6.2 m		29.5 cm	53.34 cm		
	Black Lake Canoe #3; 0003BKL	3.81 m			71.32 cm		
	Jones Lake Canoe #1	60.96 cm frag					
	Andrew Lanier Canoe, Tar River						
	Rocky Mount Canoe #1; Tar River	6.4 m half hull		38.1 cm	30.48 cm		

Publication (Author, Year)	Canoe Name/#	Length	M. Depth	M. Height	Max. Beam	Gunwhale Thick	Hull Thickness
	Rocky Mount Canoe #2; Tar River						
	Rocky Mount Canoe #3; Tar River						
	Strickland Canoe; Lake Waccamaw	6.81 m		17.78 cm	53.34 cm		7.62 cm
	Lambeth Canoe; Tar River	5.26 m		30.48 cm	64.77 cm		
Georgia Research Trip	Savannah History Museum #1	4.6 m	22.86 cm	25.4 cm	71.76 cm	2.3 cm	2.54 cm
	Savannah History Museum #2	4.85 m	38.1 cm	44.45 cm	114.94 cm	3.81 cm	3.81 cm
	Massie School Logboat	4.27 m		26.04 cm	66.68 cm	1.27 cm	1.27 cm
	Cumberland Island NS Logboat #1	3.44 m tot frags		13.97 cm ero	38.1 cm	4.45 cm	3.81-5.08 cm
	Thronateeska Heritage Museum Logboat #1	6.58 m			42.55 cm	2.54 cm	7.62 cm
	Thronateeska Heritage Museum Logboat #2	4.3 m	19.05 cm	21.59 cm	25.4 cm	6.35 cm	
	Timucuan Preserve Logboat (FL)	5.01 m	41.9 cm		41 cm		
	Altamaha River Logboat (Brockington&Assoc)	3.6 m	40 cm		45cm W70cm	1.5 cm	2 cm
	Personal Chine-Girder logboat (B&A)	3.81 m			50.8 cm	3.2 cm	
	Funk Heritage Center Logboat	3.75 m	22.86 cm	30.48 cm	59.06 cm	1.91 cm	
	Oconee Heritage Center Logboat; SC	9.66 m	33 cm		55.88 cm		
Robin Moore, 2005, pers comm	Canoe in Gator Enclosure (St. Augustine, FL)	6.1 m			1.07 m		
South Carolina Trip Research	Old Santee Canal Park Logboat	3.73 m		29.21 cm	70.5 cm	2.54-3.81 cm	7.62 cm
	Charleston Mus. Logboat #1	5.2 m		26 cm	83.8 cm	1.9-2.54 cm	7.62-10.2 cm
	Charleston Mus. Plantation Barge "Bessie"	8.94 m		61 cm	1.78 m	2.54-5.08 cm	7.62-10.2 cm
	38BU103 Beaufort R. + Chowan Crk. Logboat	6.7 m			71 cm		
	38BU57 Hemmings/Boyer logboat	3.8 m		30.5 cm	91.44 cm		
	38CH57/38CN171 Dunlap logboat	6.1 m					
	38HA144 Chimlee Lake Logboat	10.8 m		50 cm	65 cm	4 cm	10 cm
	38SU22 Cut Dam Canoe	2.6 m frag			61 cm		48 cm?
	38GE90 T.B. Canoe site						
	38GE82 "Roots" Logboat(SC State Mus)	4.5 m			83.8 cm		
	38DR36 Kizer/Judy logboat	8.7 m	23 cm	29 cm	73.7 cm	2.54 cm	5.08 cm
	38CN84 Ferguson logboat	4.1 m	38.1 cm	43 cm	73.7 cm	2.54 cm	5.08 cm
	38BK345 Bob's logboat	7.3 m			61 cm		
	38BK164 East Branch Cooper River						
	38CN83/38CN38 Chessey Creek Logboat	3.94 m	22.9 cm	30.5 cm	45.7 cm	5.08 cm	7.62 cm
	38CN19 Strickland Canoe						
	Ft. Jackson Logboat	4.6 m				1.9 cm	
	Kevin Rooney's Canoe hobby lic. 1288						
	Lowe Canoe #1						
	Lowe Canoe #2						
	Lowe Canoe #3						
	Georgetown Canoe (Tom Davis)						
	Drew Ruddy Canoe						
	Dan Ellis Canoe						
	Charles Towne Landing Logboat #2	3.3 m	19 cm	23 cm	61 cm	1.9 cm	3.81 cm
	Wilford Logboat #1	7.4 m	53 cm	56 cm	56 cm	5.08 cm	7.62 cm
	Wilford Logboat #2						
	Wilford Logboat #3	frags					
	Hilton Head Canoe #1	4.5 m		56 cm	84 cm	4.5 cm-6.4 cm	10.2-17.8 cm
	Hilton Head Canoe #2	6.8 m			81.3 cm	3.81cm-4.5 cm	3.2 cm-3.81 cm
	Hilton Head Canoe #3	1.7 m			57.2 cm	2.54 cm	4.5 cm
	Parris Island Logboat/Cooler Canoe	9.144 m	41-45.7cm	50 cm	61 cm	3.81 cm	5.08 cm
	38SU8 Logboat site	4.75 m	33 cm	41 cm	51 cm	5.08 cm	7.62 cm
	Horry County Mus. #1	5.16 m		24.8 cm	84 cm	1.9cm-2.9 cm	3.8,5.1,9,10.8cm

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	Horry County Mus. #2	5.8 m		30.5 cm	61 cm	1.9cm-2.2 cm	2.54 cm
	Horry County Mus. #3	4.1 m		19.7 cm	77 cm	2.54 cm	2.54 cm
Virginia DHR files	Upper Machodoc Creek logboat (Ken Busby)	4.6 m		41 cm	60 cm	5.08 cm	10.2-15 cm
	South Anna River logboat 1 (Kenneth Lancaster)	5.23 m	28-33 cm	35.6 cm	45.7 cm	2.54 cm	7.62 cm
	South Anna River logboat 2 (Kattie Bowells)	4.8 m	20.3 cm	23 cm	33 cm	2.54 cm	2.54 cm
	Blackwater River logboat 1 (Minton and Bell)	4.6 m					
	Blackwater River logboat 2 (Charles Lee Bell)	4.9 m					
	Blackwater River logboat 3(J. Richard Andrews)	3.8 m	23 cm	30.5 cm	64 cm	3 cm	3.5 cm
	Blackwater River logboat 4(J. Richard Andrews)	3.5 m		30.5 cm	47 cm		
Florida State Site Files	Moon Lake Canoe #2 (Alachua Co. FL)	8.35 m		30.5 cm	58 cm	15 cm	24 cm
	Watermelon Pond Canoe (Alachua Co, FL)	4.8 m					
	Orange Lake Canoe #1	5 m		30 cm	60 cm		
	Orange Lake Canoe #2	7.72 m		48 cm	43 cm	3.8 cm-5.08 cm	10 cm
	Town Lake Canoe	5.34 m		25 cm	53 cm		
	Lake Elizabeth Canoe						
	Levy Lake Canoe	3.42 m		36.5 cm	47 cm	8 cm	15 cm
	Morris Canoe						
	Hampton Lake #2	5.5 m			23 cm		
	Hampton Lake #3	5.18 m		45 cm	51 cm		
	Crosby Lake Canoe #1	7.2 m		14 cm	50 cm	5-10 cm	8-10 cm
	Crosby Lake Canoe #2	5.8 m					
	Griffith Canoe (Bradford Co., FL)						
	Otter Creek Canoe #1 (Bay Co., FL)	12.2 m					
	White Western Lake Canoe	5.23 m			41 cm		
	Pat's Elbow Canoe (Citrus Co., FL)						
	Gatorbone Lake Canoe	4.83 m		35 cm	37.5 cm		
	Lake Geneva Canoe #1 (Clay Co., FL)	2.03 m			45 cm		
	Lake Geneva Canoe #2	93 cm		50 cm	37 cm		
	Lake Geneva Canoe #3	4.28 m		52 cm	51 cm		
	Glisson Lake Canoe	5.2 m					
	Hall Lake Canoe #1	4.24 m		36 cm	25 cm	2.54-7.6 cm	3.8-10 cm
	Hall Lake Canoe #2	4.6 m					
	Hall Lake Canoe #3	70 cm					
	Hall Lake Canoe #4	6 m					
	"Gun Dump" Site/Seminole Lake Canoes (3)						
	Brett Canoe						
	Miami Area Canoe (Dade Co., FL)						
	Lord Nelson Canoe (Dural Co, FL)	8.25 m		60 cm	1.2 m		
	Arbuckle Creek Canoe #2) (Highlands Co.)						
	Arbuckle Creek Canoe #1	5.94 m		43 cm	45 cm	2 cm	7 cm
	Central Florida Canoe (Hillsborough Co., FL)	5.05 m		23 cm	40 cm		
	Hillsborough County Canoe	5.08 m		20 cm	37 cm		
	Mr. Daniel's Canoe						
	Bishop Clark Canoe (Jefferson Co., FL)						
	Wildcat Lake Canoe (Lake Co, FL)	6.85 m		24 cm	35.6 cm		
	Lake Louisa Sunken Turpentine Boat	9.144 m			30.5 cm		
	Lake Griffin Canoe #1	6.9 m		30 cm	55 cm		
	Lake Griffin Canoe #2	6 m					
	Getout Creek Canoe	4.42 m		20 cm	46 cm		
	Millstone Plantation Canoe #1						

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	Millstone Plantation Canoe #2						
	Isolate Canoe Site (Liberty Co., FL)						
	Pine Island Ctr/Three Canoe Site						
	Manatee Springs Canoe (Levy Co., FL)						
	Key West Canoe (Monroe Co., FL)	6.3 m		23 cm	64 cm		
	Big Pine Key Canoe	4.95 m		55 cm	32.5 cm		
	Unid. Hull #2						
	Ocala National Forest Canoe (Marion Co., FL)	3.73 m			42.5 cm		
	Oklawaha River Canoe #1	4.26 m		33 cm	43 cm		
	Oklawaha River Canoe #4	4.09 m		12 cm	43 cm		
	Oklawaha River Canoe #5	6.9 m			61 cm		
	Withlacoochee River Canoe #3	7.9 m			41.5 cm		
	Lake Bryant Canoe #1	4.7 m					
	Lake Apopka Canoe #2 (Orange Co., FL)	5 m			72 cm		
	John's Lake Canoe #1	3.05 m					
	John's Lake Canoe #2						
	King Lake East Canoe (Paseo Co. FL)						
	Hillsboro Riv. Canoe/Barnhill Canoe(PalmBeach)	13.8 m					
	Lake Osborne Canoe	61 cm			30.5 cm		
	Lake Hollingsworth Canoe (group of 14)						
	Crooked Lake Canoe #4 (Polk Co., FL)						
	Lake Agnus Canoe	3.19 m		17 cm	32 cm		
	Lake Rosalie Canoe Group						
	Florahome Canoe #1 (Putnam Co., FL)	4.13 m		45 cm	46 cm		7 cm
	Florahome Canoe #2	5.55 m		45 cm	60 cm		
	Florahome Canoe #3	5.6 m		37.5 cm	37.5 cm		
	Little Orange Lake Canoe #1	4.75 m		27.5 cm	85 cm		
	Lake Galilee Canoe #1	3 m					
	Lake Galilee Canoe #2	1.5 m		49 cm	47 cm		
	Lake Galilee Canoe #3	1.57 m		25 cm	42 cm		10 cm
	Georges Lake Canoe #1	3.7 m		27.4 cm	45.7 cm		
	Brantly Lake Canoe	4.6 m			33 cm		
	Satsuma Lake Canoe (miniature canoe)	23 cm			4 cm		
	Lake Cambo Canoe	4.14 m	10 cm		35.5 cm		15 cm
	Two Mile Pond Canoe	3.52 m	9 cm		42 cm		15 cm
	Mariner Lake Canoe	4.52 m	10 cm		38 cm		15 cm
	Ashley Lake Canoe #1	5.12 m	12 cm	21 cm	36 cm		
	Goose Lake Canoe #1	4.45 m	16 cm	24 cm	42 cm		
	Goose Lake Canoe #4	4.26 m	15 cm		42 cm		
	Brite Lake Canoe	3.4 m			30.5 cm	9-12 cm	10-12 cm
	Oklawaha River Canoe #6	3.36 m	25.5 cm		71 cm		
	Stokes Pond Canoe Group (5)						
	Bear Lake Canoes (3)						
	Withlacoochee River Canoe #2	3.7 m		25 cm	51 cm		
	Seville Canoe	1.21 m					
	Thornhill Lake Canoe	5.93 m		42 cm	75 cm		
	Tomoka River Canoe						

Publication (Author, Year)	Canoe Name/#	Slenderness Coefficient	Hull Mass (kg)	UWL (cm)	Safe Loading (kg)	Crew Capacity
Brose and Greber, 1982	Ringler	6.2				
Alford, 1992	Doodle	5.4				
	Unnamed	4.4				
	Bridgeton hull	4.22				
Carter, et al, 1982	Uniacke Lake, Nova Scotia	7.7				
Barnett, 1984	Homochitto River Canoe #2, MS	7.53				
	MS Delta Area; OCM	8.25				
	Picayune, MS	5.73				
Pittman and Lipe, 1972	Black Lake, Elizabethtown, NC	4.54				
Wheeler, et al, 2003	Newnan's Lake:					
	1	9.9				
	2	12.3				
	3	8.6				
	4	22.2				
	5	3.6				
	6	10				
	7	16				
	8	12.8				
	9	10.5				
	10	13.3				
	11	11				
	12	18.2				
	13	11.5				
	14	9.1				
	15	11.8				
	16	12.8				
	17	10.6				
	18	10.3				
	19	14.3				
	20	10.2				
	21					
	22	14.6				
	23	10.3				
	24	8.7				
	25	10				
	26	10.98				
	27	11.2				
	28	8.7				
	29	11.2				
	30	11.7				
	31					
	32	10.4				
	33					
	34	12				
	35	11.3				
	36	9.5				
	43	9.14				
	45	4				
	49	9.2				

Publication (Author, Year)	Canoe Name/#	Slenderness Coefficient	Hull Mass (kg)	UWL (cm)	Safe Loading (kg)	Crew Capacity
	54	7.8				
	55	13.5				
	61	14.3				
	70	2.6				
	71	2.25				
	72	15.6				
	73	13				
	74					
	76	10.3				
	77					
	78					
	79	8.3				
	80	12.4				
	81					
	95					
	DeLeon Springs 2					
	DeLeon Springs 1					
	Lake Galilee 5	11				
	Harney Flats Canoe (FL)					
	Davis Florahome 4					
	Lake Monroe					
	Stricklin 17	9.7				
	Lake Louisa 1	10.75				
	Lake Louisa 2					
	IMC 1					
	Lakeland	8.5				
	Davis Florahome 5					
Wendy Weaver, email	Altamaha, GA canoe	8	66.4 kg	8.5 (6.4Q)	(40%) 63 (30%) 79	(40%) 1 (30%) 1
	farmer watering trough	7.5				
Jo Miles-Seeley, 1995	Swan Lake Canoe (Mississippi)	11	241.4 kg	8.5 (6.7 Q)	(40%) 250 (30%) 315	(40%) 4 (30%) 5
Noel R. Stowe, 1974	Gulf Coast Canoe #1(Mobile, AL)	13.4				
	Gulf Coast Canoe #2 (Van Cleave, MS)	6.2				
	Gulf Coast Canoe #3 (Cedar Creek, MS)	8.3				
	Gulf Coast Canoe #4(Pascagoula, MS)	10.7				
Sam McGahey, 1986 (All MS)	Homochitto Canoe #1					
	Georgetown Canoe (Pearl River, MS)	9.9	61.12 kg	7.5 (4.5 Q)	(40%) 67 (30%) 85	(40%) 1 (30%) 1
	Shubuta Canoe (Chickasawhay River, MS)	9.2				
	Malone Lake Canoe	18.25				
	East Pearl Canoe #1 (Pearl River, MS)	8.2				
	Steele Bayou Canoe	5.97				
	Linday Canoe (Tombigbee River, MS)					
	Pascagoula River Canoe #1					
	Greenwood Canoe (Tallahatchi River, MS)	19				
Anne Marie Plane, 1991 (MA)	Weymouth Great Pond logboat	4.7				
	Hopkinton logboat (Jo-Sylvia Lake, MA)	7.5				
Allen R. Saltus (MS & LA)	"Keel" Pascagoula River canoe, MS	4	850.9 kg	21.5(14.8Q)	(40%) 345 (30%) 480	(40%) 5 (30%) 8
	Carolina Bluff Canoe (Red River, LA)	10.3	492.4 kg	13 (9.4 Q)	(40%) 340 (30%) 460	(40%) 5 (30%) 7
Mark Joseph Hartmann, 1996	DeLeon I (Florida)	7.2				
	DeLeon II (Florida)	7				
	Lake Galilee 4 (Florida)	9.8	312.96 kg	18.5(12.4Q)	(40%) 395 (30%) 250	

Publication (Author, Year)	Canoe Name/#	Slenderness Coefficient	Hull Mass (kg)	UWL (cm)	Safe Loading (kg)	Crew Capacity
	Florahome 4 (FL)	6.6				
	Stricklin 18 (FL)	9.7				
	Lakeland (IMC)					
	Swisher (Putnam County, FL)	14	219.84 kg	14 (9.9 Q)	(40%) 130 (30%) 190	(40%) 2 (30%) 3
	Cowpen Lake					
	Magnolia Lake	17				
	Dog Island	9.1				
	Tucker Lake 2	12.56				
	Zellwood I					
	Hampton Lake I					
	Loch Low Lake Canoe (FL)	20.2				
	Wildent Lake	28.5				
	Little Shady Lake	12.9				
	Lake Kissimmee					
	Pine Lakes	11				
	Little Orange Lake 3	7.78				
	Red River (LA)	16	1300.8 kg	23.5(15.5Q)	(40%) 225 (30%) 510	(40%) 3 (30%) 8
	Silver River (FL)					
	Tucker Lake 4					
	Micanopy 2	12.85				
	Long Pond	9.75	491.25 kg	25 (16.9Q)	(40%) 71 (30%) 176	(40%) 1 (30%) 2
	Suwannee 3	7.6				
	Goose Lake 3	8.2				
	Lake Griffin 3					
	Grandin	12.1	130.15 kg	11.5(8.1 Q)	(40%) 94 (30%) 137	(40%) 1 (30%) 2
	Micanopy 1	11.2				
	Little Orange Lake 2	6	323.77 kg	19 (12.6 Q)	(40%) 132 (30%) 202	(40%) 2 (30%) 3
	Stricklin 14 (FL)	9.77				
	Fluker's Bluff (LA)	8.33				
	Grassy Lake (FL)	14.2				
	Keuka Lake (FL)	13.5				
	Hartman Lake (FL)	9.6				
	Stricklin 10 (FL)					
	Georges Lake 2 (FL)					
	Tombigbee I (AL)	17				
	Goose Lake 2 (FL)	9.8				
	Tucker Lake I (FL)	13.05				
	Hull Lake I (FL)	17				
	Goose Lake 5 (FL)					
	Suwannee River 2 (FL)	10.5	645.03 kg	20 (12.9 Q)	(40%) 177 (30%) 334	(40%) 2 (30%) 5
	Crooked Lake 3 (FL)					
	Hancock Lake (FL)					
	Lake Salvador 2 (LA) 16SC49	13.7				
	Stricklin 4 (FL)	10.4				
	Texas Memorial Museum (TX)	5.5				
	High Springs Canoe (FL)	18.125				
	Econonfina Creek Canoe (FL)					
	Hampton Lake I Canoe					
	Lake Washington Canoe (FL)					
	Fort Lauderdale Canoe (FL)	6.75				

Publication (Author, Year)	Canoe Name/#	Slenderness Coefficient	Hull Mass (kg)	UWL (cm)	Safe Loading (kg)	Crew Capacity
	Lake Inverness Canoe (FL)	9				
	Brooklyn Lake Canoe (FL)	8.2				
	Seminole Lake Canoe 2 (FL)					
	Dade County Canoe (FL)					
	Etheridge Canoe (FL)	5.5				
	Pensacola Canoe (FL)	2.8				
	Carrabelle/Dog Island Canoe (FL)	10				
	"Hatian Canoe" Gasden Co., FL	10				
	Lake Wimico Canoe (FL)	25				
	Silver Lake Canoe (FL)					
	Nautta Rise Canoe (FL)	4.6				
	Crows Bluff Canoe (FL)					
	Lee County Canoe (FL)					
	Waccasassa River Canoe (FL)					
	Delancy Canoe (FL)	7.8				
	Jupiter Island Canoe (FL)					
	Grassy Key Canoe (FL)					
	Lake Apopka 1 (FL)					
	Zellwood Frags 2	2				
	Zellwood Frag 3					
	Lake Preston Canoe (FL)	8.8				
	St. Petersburg Canoe (FL)	6.77	303.01 kg	13 (9.3 Q)	(40%) 210 (30%) 284	(40%) 3 (30%) 4
	Crooked Lake Canoe 1 (FL)	10.33				
	Florida Rock Canoe (FL)	7.66				
	Adams Ranch Canoe (FL)					
	Escambia Bay Canoe (FL)					
	Hillary Peat Canoe (FL)					
	Suwannee River Canoe Bottm&end frag					
	Daytona Beach/Orange City Canoe (FL)	14.75				
	Albany Canoe (FL)					
	Cumberland Canoe (FL)	7.1				
	Pridgen Canoe (Bladen Co. NC)					
	Battery Island Canoe (NC) 0079CFR					
	Waccamaw Canoe #1 (NC)	12.5				
	Tyson Canoe #1 (NC-Cape Fear Mus)	7.2				
	Manteo Marine Resources Center Canoe					
	Goodwind Canoe (Carolina Beach Inlet, NC)					
Hartmann plus my own research	Cottle Half Moon (Onslow Co. Canoe NC)	13.1				
	Valenti Canoe (NC) Lumber River 0001LUR	10.8	193.3 kg	13 (9.2 Q)	(40%) 110 (30%) 170	(40%) 1 (30%) 2
	Lake Phelps Canoe #1 0001PHL	6.4				
	Lake Phelps 30ft 0002PHL	13.3	497.64 kg	13 (8.9 Q)	(40%) 340 (30%) 470	(40%) 5 (30%) 7
	Lake Phelps; Butler Canoe 0003PHL	7.2	91 kg	10.5 (7.1 Q)	(40%) 65.5 (30%) 102	(40%) 1 (30%) 1
	Lake Phelps; Pond Canoe 0004 PHL	7.8	366 kg	17 (11.4 Q)		
	Lake Phelps #5	16.8	575 kg	17 (11.5 Q)	(40%) 64 (30%) 255.5	(40%) 1 (30%) 4
	Lake Phelps #6	13.5	355 kg	16.5 (10.6 Q)		
	Lake Phelps #7	12				
	Lake Phelps #8	13.2	809 kg	20 (13 Q)		
	Lake Phelps #9					
	Lake Phelps #10	9.2	566 kg	20 (13.1 Q)		
	Lake Phelps #11	16	899 kg	21.5 (15 Q)		

Publication (Author, Year)	Canoe Name/#	Slenderness Coefficient	Hull Mass (kg)	UWL (cm)	Safe Loading (kg)	Crew Capacity
	Lake Phelps #12					
	Lake Phelps #13					
	Lake Phelps #14					
	Lake Phelps #15	15.6	268 kg	16.5 (10.4)		
	Lake Phelps #16	14.7	295 kg	11.5 (8 Q)		
	Lake Phelps #17	7	360 kg	16.5 (10.5 Q)		
	Lake Phelps #18	23	453.4 kg	14 (9.9 Q)	(40%) 72.5 (30%) 254	(40%) 1 (30%) 4
	Lake Phelps #19	14.5	550 kg	17 (11.2 Q)		
	Lake Phelps #20	23.7	198 kg	12 (8.3 Q)		
	Lake Phelps #21	8.7	220 kg	17 (11.2 Q)		
	Lake Phelps #22	10				
	Swartz's Dog Pen Canoe Lake Phelps 0025PHL	8.5				
The Mariner's Museum Research	BF26 Haida Nation, Queen Charlotte Is.	9.8				
	BU51 Powhatan Creek, VA	12.5	607.08 kg	16.5(10.8Q)	(40%) 331 (30%) 440	(40%) 5 (30%) 7
	BU 37 Lake Michigan	8.9				
	BU 16 Lake Champlain, NY-VT	10.67				
	BU 6 Cayuga Lake, NY(log) used in CT	8				
	BU 14 Dismal Swamp;used on Lake Drummond	7.5				
	BF 24 La Conner, WA	17.5				
	BU 13 Pearl River, LA	2.5				
	#125 Blackwater, VA (disintigrated, missing)	5.76				
	BU 8 Pith-lo FL Everglades	5.6				
North Carolina UAB records	Webber Canoe, Pamlico River 0030PMR	5.6				
	Elwell's Ferry Canoe NW Cape Fear River	6.26				
	Futch Creek Canoe 0001MDS	12.2				
	Waccamaw Canoe #3 0003WAL	9.5				
	Coinjock Canoe 0001COS					
	Batson Canoe Topsail Sound 0001TPS					
	Carter Canoe, North Landing River 0001NLR	6.6				
	Lower Little River Canoe 0071CFR	9				
	Ruffin Canoe, Tar River, Edgecombe 0016TRR	10.6				
	#1-1905 White Lake 0001WHL					
	#2-1906 Singletary lake 0002WHL					
	#3-1907 Singletary lake 0003WHL					
	#4-1908 White Lake 0004WHL					
	Pridgen Canoe fragment White Lake 0006WHL					
	Fayetteville Road canoe white Lake 0007WHL					
	Carolyn Tanner Canoe White Lake 0008WHL					
	Mary Shaw Canoe White Lake 0009WHL					
	Big Jim Canoe White Lake 0010WHL	12				
	Linton Canoe; Lake Waccamaw 0002WAL					
	Jasper Davis Canoe;Tar River RckyMtMillsDam					
	Shrimp Net Canoe, 0080CFR					
	Tyson Canoe #2, Gray's Creek 0069CFR					
	Black Lake Canoe #1; 0001BKL	6.2				
	Black Lake Canoe #2; 0002BKL	11.6				
	Black Lake Canoe #3; 0003BKL	5.3				
	Jones Lake Canoe #1					
	Andrew Lanier Canoe, Tar River					
	Rocky Mount Canoe #1; Tar River	21				

Publication (Author, Year)	Canoe Name/#	Slenderness Coefficient	Hull Mass (kg)	UWL (cm)	Safe Loading (kg)	Crew Capacity
	Rocky Mount Canoe #2; Tar River					
	Rocky Mount Canoe #3; Tar River					
	Strickland Canoe; Lake Waccamaw	12.75				
	Lambeth Canoe; Tar River	8.1				
Georgia Research Trip	Savannah History Museum #1	6.4	111.24 kg	9.5 (5.8 Q)	(40%) 99 (30%) 143	(40%) 1 (30%) 2
	Savannah History Museum #2	4.2	307.68 kg	10.5 (7.5Q)	(40%) 97 (30%) 124	(40%) 1 (30%) 2
	Massie School Logboat	6.4				
	Cumberland Island NS Logboat #1					
	Thronateeska Heritage Museum Logboat #1	15.4				
	Thronateeska Heritage Museum Logboat #2	17				
	Timucuan Preserve Logboat (FL)	12.2				
	Altamaha River Logboat (Brockington&Assoc)	8	44.78 kg	8 (4.2 Q)	(40%) 43 (30%) 53	(40%) 1 (30%) 1
	Personal Chine-Girder logboat (B&A)	7.5				
	Funk Heritage Center Logboat	6.3				
	Oconee Heritage Center Logboat; SC	17.2				
Robin Moore, 2005, pers comm	Canoe in Gator Enclosure (St. Augustine, FL)					
South Carolina Trip Research	Old Santee Canal Park Logboat	5.3	183 kg	12cm(8.3 Q)	(40%)119 (30%) 181	(40%) 1 (30%) 3
	Charleston Mus. Logboat #1	6.2	321 kg	12cm(8.6Q)	(40%) 171 (30%) 294	(40%) 2 (30%) 4
	Charleston Mus. Plantation Barge "Bessie"	5.02	1393.6 kg	13 (9.4 Q)	(40%) 884 (30%)1112	(40%) 14 (30%) 18
	38BU103 Beaufort R. + Chowan Crk. Logboat	9.44				
	38BU57 Hemmings/Boyer logboat	4.16				
	38CH57/38CN171 Dunlap logboat					
	38HA144 Chimlee Lake Logboat	16.6	1019 kg	18.5 (12 Q)	(40%) 470 (30%) 670	(40%) 7 (30%) 11
	38SU22 Cut Dam Canoe	5.3				
	38GE90 T.B. Canoe site					
	38GE82 "Roots" Logboat(SC State Mus)	5.37				
	38DR36 Kizer/Judy logboat	11.8	356.7 kg	10.5 (7.5 Q)	(40%) 293 (30%) 420	(40%) 4 (30%) 7
	38CN84 Ferguson logboat	5.56	204 kg	11.5 (8.2 Q)	(40%) 160 (30%) 205	(40%) 2 (30%) 3
	38BK345 Bob's logboat	12				
	38BK164 East Branch Cooper River					
	38CN83/38CN38 Chessey Creek Logboat	8.6	218 kg	16.5 (11 Q)	(40%) 42 (30%) 114	(40%) 1 (30%) 1
	38CN19 Strickland Canoe					
	Ft. Jackson Logboat					
	Kevin Rooney's Canoe hobby lic. 1288					
	Lowe Canoe #1					
	Lowe Canoe #2					
	Lowe Canoe #3					
	Georgetown Canoe (Tom Davis)					
	Drew Ruddy Canoe					
	Dan Ellis Canoe					
	Charles Towne Landing Logboat #2	5.41	82.4 kg	8.5 (6.4 Q)	(40%) 83 (30%) 120	(40%) 1 (30%) 2
	Wilford Logboat #1	13.2	695.5 kg	20 (13 Q)	(40%) 300 (30%) 430	(40%) 5 (30%) 7
	Wilford Logboat #2					
	Wilford Logboat #3					
	Hilton Head Canoe #1	5.4	755.7 kg	21.5 (14 Q)	(40%) 290 (30%) 430	(40%) 4 (30%) 7
	Hilton Head Canoe #2	8.4				
	Hilton Head Canoe #3	2.97				
	Parris Island Logboat/Cooler Canoe	15				
	38SU8 Logboat site	9.3				
	Horry County Mus. #1	6.14	314.5 kg	12 (8.5 Q)	(40%) 147 (30%) 262	(40%) 2 (30%) 4

Publication (Author, Year)	Canoe Name/#	Slenderness Coefficient	Hull Mass (kg)	UWL (cm)	Safe Loading (kg)	Crew Capacity
	Horry County Mus. #2	9.5	128 kg	8.5 cm (6 Q)	(40%) 135 (30%) 177	(40%) 2 (30%) 2
	Horry County Mus. #3	5.3	99 kg	8.5 (5.6 Q)	(40%) 85 (30%) 135	(40%) 1 (30%) 2
Virginia DHR files	Upper Machodoc Creek logboat (Ken Busby)	7.67				
	South Anna River logboat 1 (Kenneth Lancaster)	11.4	273.6 kg	16.5 (10.7Q)	(40%) 105 (30%) 180	(40%) 1 (30%) 3
	South Anna River logboat 2 (Kattie Bowells)	14.5				
	Blackwater River logboat 1 (Minton and Bell)					
	Blackwater River logboat 2 (Charles Lee Bell)					
	Blackwater River logboat 3(J. Richard Andrews)	6				
	Blackwater River logboat 4(J. Richard Andrews)	7.4				
Florida State Site Files	Moon Lake Canoe #2 (Alachua Co. FL)	14.4	1583 kg	26 cm(18 Q)		
	Watermelon Pond Canoe (Alachua Co, FL)					
	Orange Lake Canoe #1	8.3				
	Orange Lake Canoe #2	18	595.6 kg	20cm(13.4Q)	(40%) 227.5(30%) 351.7	
	Town Lake Canoe	10.1				
	Lake Elizabeth Canoe					
	Levy Lake Canoe	7.3				
	Morris Canoe					
	Hampton Lake #2	24				
	Hampton Lake #3	10.2				
	Crosby Lake Canoe #1	14.4				
	Crosby Lake Canoe #2					
	Griffith Canoe (Bradford Co., FL)					
	Otter Creek Canoe #1 (Bay Co., FL)					
	White Western Lake Canoe	12.8				
	Pat's Elbow Canoe (Citrus Co., FL)					
	Gatorbone Lake Canoe	12.9				
	Lake Geneva Canoe #1 (Clay Co., FL)	4.5				
	Lake Geneva Canoe #2	2.5				
	Lake Geneva Canoe #3	8.4				
	Glisson Lake Canoe					
	Hall Lake Canoe #1	17	217.4 kg	21.5 (14.3Q)	(40%) 1.7 (30%) 62	(40%) 1 (30%) 1
	Hall Lake Canoe #2					
	Hall Lake Canoe #3					
	Hall Lake Canoe #4					
	"Gun Dump" Site/Seminole Lake Canoes (3)					
	Brett Canoe					
	Miami Area Canoe (Dade Co., FL)					
	Lord Nelson Canoe (Dural Co, FL)	6.9				
	Arbuckle Creek Canoe #2) (Highlands Co.)					
	Arbuckle Creek Canoe #1	13.2				
	Central Florida Canoe (Hillsborough Co., FL)	12.6				
	Hillsborough County Canoe	13.7				
	Mr. Daniel's Canoe					
	Bishop Clark Canoe (Jefferson Co., FL)					
	Wildcat Lake Canoe (Lake Co, FL)	19.2				
	Lake Louisa Sunken Turpentine Boat	30				
	Lake Griffin Canoe #1	12.5				
	Lake Griffin Canoe #2					
	Getout Creek Canoe	9.6				
	Millstone Plantation Canoe #1					

Publication (Author, Year)	Canoe Name/#	Slenderness Coefficient	Hull Mass (kg)	UWL (cm)	Safe Loading (kg)	Crew Capacity
	Millstone Plantation Canoe #2					
	Isolate Canoe Site (Liberty Co., FL)					
	Pine Island Ctr/Three Canoe Site					
	Manatee Springs Canoe (Levy Co., FL)					
	Key West Canoe (Monroe Co., FL)	9.8				
	Big Pine Key Canoe	15.2				
	Unid. Hull #2					
	Ocala National Forest Canoe (Marion Co., FL)	8.8				
	Oklawaha River Canoe #1	10				
	Oklawaha River Canoe #4	9.5				
	Oklawaha River Canoe #5	11.3				
	Withlacoochee River Canoe #3	19				
	Lake Bryant Canoe #1					
	Lake Apopka Canoe #2 (Orange Co., FL)	7				
	John's Lake Canoe #1					
	John's Lake Canoe #2					
	King Lake East Canoe (Paseo Co. FL)					
	Hillsboro Riv. Canoe/Barnhill Canoe(PalmBeach)					
	Lake Osborne Canoe	2				
	Lake Hollingsworth Canoe (group of 14)					
	Crooked Lake Canoe #4 (Polk Co., FL)					
	Lake Agnus Canoe	10				
	Lake Rosalie Canoe Group					
	Florahome Canoe #1 (Putnam Co., FL)	9				
	Florahome Canoe #2	9.25				
	Florahome Canoe #3	15				
	Little Orange Lake Canoe #1	5.6				
	Lake Galilee Canoe #1					
	Lake Galilee Canoe #2	3.2				
	Lake Galilee Canoe #3	3.7				
	Georges Lake Canoe #1	8.1				
	Brantly Lake Canoe	14				
	Satsuma Lake Canoe (miniature canoe)	5.75				
	Lake Cambo Canoe	11.7				
	Two Mile Pond Canoe	8.4				
	Mariner Lake Canoe	11.9				
	Ashley Lake Canoe #1	14				
	Goose Lake Canoe #1	10.6				
	Goose Lake Canoe #4	10				
	Brite Lake Canoe	11				
	Oklawaha River Canoe #6	4.7				
	Stokes Pond Canoe Group (5)					
	Bear Lake Canoes (3)					
	Withlacoochee River Canoe #2	7.3				
	Seville Canoe					
	Thornhill Lake Canoe	8				
	Tomoka River Canoe					
	Lake Griffin Canoe #2					
	Getout Creek Canoe	9.6				
	Millstone Plantation Canoe #1					

Publication (Author, Year)	Canoe Name/#	Volumetric Coef	Midships Coef	Block Coef
Brose and Greber, 1982	Ringler			
Alford, 1992	Doodle			
	Unnamed			
	Bridgeton hull			
Carter, et al, 1982	Uniacke Lake, Nova Scotia			
Barnett, 1984	Homochitto River Canoe #2, MS			
	MS Delta Area; OCM			
	Picayune, MS			
Pittman and Lipe, 1972	Black Lake, Elizabethtown, NC			
Wheeler, et al, 2003	Newnan's Lake:			
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	2			
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	32			
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	36			
	43			
	45			
	49			

Publication (Author, Year)	Canoe Name/#	Volumetric Coef	Midships Coef	Block Coef
	54			
	55			
	61			
	70			
	71			
	72			
	73			
	74			
	76			
	77			
	78			
	79			
	80			
	81			
	95			
	DeLeon Springs 2			
	DeLeon Springs 1			
	Lake Galilee 5			
	Harney Flats Canoe (FL)			
	Davis Florahome 4			
	Lake Monroe			
	Stricklin 17			
	Lake Louisa 1			
	Lake Louisa 2			
	IMC 1			
	Lakeland			
	Davis Florahome 5			
Wendy Weaver, email	Altamaha, GA canoe	0.0017	1.21	0.59
	farmer watering trough			
Jo Miles-Seeley, 1995	Swan Lake Canoe (Mississippi)	0.00067	1.78	0.64
Noel R. Stowe, 1974	Gulf Coast Canoe #1(Mobile, AL)			
	Gulf Coast Canoe #2 (Van Cleave, MS)			
	Gulf Coast Canoe #3 (Cedar Creek, MS)			
	Gulf Coast Canoe #4(Pascagoula, MS)			
Sam McGahey, 1986 (All MS)	Homochitto Canoe #1			
	Georgetown Canoe (Pearl River, MS)	0.000465	1.65	0.33
	Shubuta Canoe (Chickasawhay River, MS)			
	Malone Lake Canoe			
	East Pearl Canoe #1 (Pearl River, MS)			
	Steele Bayou Canoe			
	Linday Canoe (Tombigbee River, MS)			
	Pascagoula River Canoe #1			
	Greenwood Canoe (Tallahatchi River, MS)			
Anne Marie Plane, 1991 (MA)	Weymouth Great Pond logboat			
	Hopkinton logboat (Jo-Sylvia Lake, MA)			
Allen R. Saltus (MS & LA)	"Keel" Pascagoula River canoe, MS	0.0063	0.44	1.24
	Carolina Bluff Canoe (Red River, LA)	0.0014	1.24	0.83
Mark Joseph Hartmann, 1996	DeLeon I (Florida)			
	DeLeon II (Florida)			
	Lake Galilee 4 (Florida)	0.004	0.467	0.94

Publication (Author, Year)	Canoe Name/#	Volumetric Coef	Midships Coef	Block Coef
	Florahome 4 (FL)			
	Stricklin 18 (FL)			
	Lakeland (IMC)			
	Swisher (Putnam County, FL)	0.0014	1.14	0.8
	Cowpen Lake			
	Magnolia Lake			
	Dog Island			
	Tucker Lake 2			
	Zellwood I			
	Hampton Lake I			
	Loch Low Lake Canoe (FL)			
	Wildent Lake			
	Little Shady Lake			
	Lake Kissimmee			
	Pine Lakes			
	Little Orange Lake 3			
	Red River (LA)	0.002	1.02	1.25
	Silver River (FL)			
	Tucker Lake 4			
	Micanopy 2			
	Long Pond	0.0081	0.53	1.3
	Suwannee 3			
	Goose Lake 3			
	Lake Griffin 3			
	Grandin	0.0013	1.06	0.65
	Micanopy 1			
	Little Orange Lake 2	0.0086	0.48	0.95
	Stricklin 14 (FL)			
	Fluker's Bluff (LA)			
	Grassy Lake (FL)			
	Keuka Lake (FL)			
	Hartman Lake (FL)			
	Stricklin 10 (FL)			
	Georges Lake 2 (FL)			
	Tombigbee I (AL)			
	Goose Lake 2 (FL)			
	Tucker Lake I (FL)			
	Hull Lake I (FL)			
	Goose Lake 5 (FL)			
	Suwannee River 2 (FL)	0.0028	0.75	0.94
	Crooked Lake 3 (FL)			
	Hancock Lake (FL)			
	Lake Salvador 2 (LA) 16SC49			
	Stricklin 4 (FL)			
	Texas Memorial Museum (TX)			
	High Springs Canoe (FL)			
	Econonfina Creek Canoe (FL)			
	Hampton Lake I Canoe			
	Lake Washington Canoe (FL)			
	Fort Lauderdale Canoe (FL)			

Publication (Author, Year)	Canoe Name/#	Volumetric Coef	Midships Coef	Block Coef
	Lake Inverness Canoe (FL)			
	Brooklyn Lake Canoe (FL)			
	Seminole Lake Canoe 2 (FL)			
	Dade County Canoe (FL)			
	Etheridge Canoe (FL)			
	Pensacola Canoe (FL)			
	Carrabelle/Dog Island Canoe (FL)			
	"Hatian Canoe" Gasden Co., FL			
	Lake Wimico Canoe (FL)			
	Silver Lake Canoe (FL)			
	Nautta Rise Canoe (FL)			
	Crows Bluff Canoe (FL)			
	Lee County Canoe (FL)			
	Waccasassa River Canoe (FL)			
	Delancy Canoe (FL)			
	Jupiter Island Canoe (FL)			
	Grassy Key Canoe (FL)			
	Lake Apopka 1 (FL)			
	Zellwood Frags 2			
	Zellwood Frag 3			
	Lake Preston Canoe (FL)			
	St. Petersburg Canoe (FL)	0.003	0.79	0.81
	Crooked Lake Canoe 1 (FL)			
	Florida Rock Canoe (FL)			
	Adams Ranch Canoe (FL)			
	Escambia Bay Canoe (FL)			
	Hillary Peat Canoe (FL)			
	Suwannee River Canoe Bottm&end frag			
	Daytona Beach/Orange City Canoe (FL)			
	Albany Canoe (FL)			
	Cumberland Canoe (FL)			
	Pridgen Canoe (Bladen Co. NC)			
	Battery Island Canoe (NC) 0079CFR			
	Waccamaw Canoe #1 (NC)			
	Tyson Canoe #1 (NC-Cape Fear Mus)			
	Manteo Marine Resources Center Canoe			
	Goodwind Canoe (Carolina Beach Inlet, NC)			
Hartmann plus my own research	Cottle Half Moon (Onslow Co. Canoe NC)			
	Valenti Canoe (NC) Lumber River 0001LUR	0.0018	0.89	0.74
	Lake Phelps Canoe #1 0001PHL			
	Lake Phelps 30ft 0002PHL	0.0008	1.54	0.75
	Lake Phelps; Butler Canoe 0003PHL	0.0024	0.69	0.6
	Lake Phelps; Pond Canoe 0004 PHL			
	Lake Phelps #5	0.0011	1.1	0.96
	Lake Phelps #6			
	Lake Phelps #7			
	Lake Phelps #8			
	Lake Phelps #9			
	Lake Phelps #10			
	Lake Phelps #11			

Publication (Author, Year)	Canoe Name/#	Volumetric Coef	Midships Coef	Block Coef
	Lake Phelps #12			
	Lake Phelps #13			
	Lake Phelps #14			
	Lake Phelps #15			
	Lake Phelps #16			
	Lake Phelps #17			
	Lake Phelps #18	0.00051	1.6	0.85
	Lake Phelps #19			
	Lake Phelps #20			
	Lake Phelps #21			
	Lake Phelps #22			
	Swartz's Dog Pen Canoe Lake Phelps 0025PHL			
The Mariner's Museum Research	BF26 Haida Nation, Queen Charlotte Is.			
	BU51 Powhatan Creek, VA	0.0013	1.35	0.8
	BU 37 Lake Michigan			
	BU 16 Lake Champlain, NY-VT			
	BU 6 Cayuga Lake, NY(log) used in CT			
	BU 14 Dismal Swamp;used on Lake Drummond			
	BF 24 La Conner, WA			
	BU 13 Pearl River, LA			
	#125 Blackwater, VA (disintigrated, missing)			
	BU 8 Pith-lo FL Everglades			
North Carolina UAB records	Webber Canoe, Pamlico River 0030PMR			
	Elwell's Ferry Canoe NW Cape Fear River			
	Futch Creek Canoe 0001MDS			
	Waccamaw Canoe #3 0003WAL			
	Coinjock Canoe 0001COS			
	Batson Canoe Topsail Sound 0001TPS			
	Carter Canoe, North Landing River 0001NLR			
	Lower Little River Canoe 0071CFR			
	Ruffin Canoe, Tar River, Edgecombe 0016TRR			
	#1-1905 White Lake 0001WHL			
	#2-1906 Singletary lake 0002WHL			
	#3-1907 Singletary lake 0003WHL			
	#4-1908 White Lake 0004WHL			
	Pridgen Canoe fragment White Lake 0006WHL			
	Fayetteville Road canoe white Lake 0007WHL			
	Carolyn Tanner Canoe White Lake 0008WHL			
	Mary Shaw Canoe White Lake 0009WHL			
	Big Jim Canoe White Lake 0010WHL			
	Linton Canoe; Lake Waccamaw 0002WAL			
	Jasper Davis Canoe;Tar River RckyMtMillsDam			
	Shrimp Net Canoe, 0080CFR			
	Tyson Canoe #2, Gray's Creek 0069CFR			
	Black Lake Canoe #1; 0001BKL			
	Black Lake Canoe #2; 0002BKL			
	Black Lake Canoe #3; 0003BKL			
	Jones Lake Canoe #1			
	Andrew Lanier Canoe, Tar River			
	Rocky Mount Canoe #1; Tar River			

Publication (Author, Year)	Canoe Name/#	Volumetric Coef	Midships Coef	Block Coef
	Rocky Mount Canoe #2; Tar River			
	Rocky Mount Canoe #3; Tar River			
	Strickland Canoe; Lake Waccamaw			
	Lambeth Canoe; Tar River			
Georgia Research Trip	Savannah History Museum #1	0.0014	0.83	0.43
	Savannah History Museum #2	0.0033	0.82	0.64
	Massie School Logboat			
	Cumberland Island NS Logboat #1			
	Thronateeska Heritage Museum Logboat #1			
	Thronateeska Heritage Museum Logboat #2			
	Timucuan Preserve Logboat (FL)			
	Altamaha River Logboat (Brockington&Assoc)	0.0012	1.01	0.3
	Personal Chine-Girder logboat (B&A)			
	Funk Heritage Center Logboat			
	Oconee Heritage Center Logboat; SC			
Robin Moore, 2005, pers comm	Canoe in Gator Enclosure (St. Augustine, FL)			
South Carolina Trip Research	Old Santee Canal Park Logboat	0.0043	0.57	0.71
	Charleston Mus. Logboat #1	0.0028	0.07	0.75
	Charleston Mus. Plantation Barge "Bessie"	0.0024	1.16	0.825
	38BU103 Beaufort R. + Chowan Crk. Logboat			
	38BU57 Hemmings/Boyer logboat			
	38CH57/38CN171 Dunlap logboat			
	38HA144 Chimlee Lake Logboat	0.001	1.48	0.96
	38SU22 Cut Dam Canoe			
	38GE90 T.B. Canoe site			
	38GE82 "Roots" Logboat(SC State Mus)			
	38DR36 Kizer/Judy logboat	0.00066	1.48	0.65
	38CN84 Ferguson logboat	0.0036	0.773	0.72
	38BK345 Bob's logboat			
	38BK164 East Branch Cooper River			
	38CN83/38CN38 Chessey Creek Logboat	0.0044	0.56	0.9
	38CN19 Strickland Canoe			
	Ft. Jackson Logboat			
	Kevin Rooney's Canoe hobby lic. 1288			
	Lowe Canoe #1			
	Lowe Canoe #2			
	Lowe Canoe #3			
	Georgetown Canoe (Tom Davis)			
	Drew Ruddy Canoe			
	Dan Ellis Canoe			
	Charles Towne Landing Logboat #2	0.0028	0.68	0.59
	Wilford Logboat #1	0.002	1.11	0.95
	Wilford Logboat #2			
	Wilford Logboat #3			
	Hilton Head Canoe #1	0.0094	0.49	1.06
	Hilton Head Canoe #2			
	Hilton Head Canoe #3			
	Parris Island Logboat/Cooler Canoe			
	38SU8 Logboat site			
	Horry County Mus. #1	0.0028	0.68	0.74

Publication (Author, Year)	Canoe Name/#	Volumetric Coef	Midships Coef	Block Coef
	Horry County Mus. #2	0.0008	1.36	0.52
	Horry County Mus. #3	0.0018	0.73	0.45
Virginia DHR files	Upper Machodoc Creek logboat (Ken Busby)			
	South Anna River logboat 1 (Kenneth Lancaster)	0.0022	0.811	0.79
	South Anna River logboat 2 (Kattie Bowells)			
	Blackwater River logboat 1 (Minton and Bell)			
	Blackwater River logboat 2 (Charles Lee Bell)			
	Blackwater River logboat 3(J. Richard Andrews)			
	Blackwater River logboat 4(J. Richard Andrews)			
Florida State Site Files	Moon Lake Canoe #2 (Alachua Co. FL)			
	Watermelon Pond Canoe (Alachua Co, FL)			
	Orange Lake Canoe #1			
	Orange Lake Canoe #2			
	Town Lake Canoe			
	Lake Elizabeth Canoe			
	Levy Lake Canoe			
	Morris Canoe			
	Hampton Lake #2			
	Hampton Lake #3			
	Crosby Lake Canoe #1			
	Crosby Lake Canoe #2			
	Griffith Canoe (Bradford Co., FL)			
	Otter Creek Canoe #1 (Bay Co., FL)			
	White Western Lake Canoe			
	Pat's Elbow Canoe (Citrus Co., FL)			
	Gatorbone Lake Canoe			
	Lake Geneva Canoe #1 (Clay Co., FL)			
	Lake Geneva Canoe #2			
	Lake Geneva Canoe #3			
	Glisson Lake Canoe			
	Hall Lake Canoe #1	0.0033	0.77	1.1
	Hall Lake Canoe #2			
	Hall Lake Canoe #3			
	Hall Lake Canoe #4			
	"Gun Dump" Site/Seminole Lake Canoes (3)			
	Brett Canoe			
	Miami Area Canoe (Dade Co., FL)			
	Lord Nelson Canoe (Dural Co, FL)			
	Arbuckle Creek Canoe #2) (Highlands Co.)			
	Arbuckle Creek Canoe #1			
	Central Florida Canoe (Hillsborough Co., FL)			
	Hillsborough County Canoe			
	Mr. Daniel's Canoe			
	Bishop Clark Canoe (Jefferson Co., FL)			
	Wildcat Lake Canoe (Lake Co, FL)			
	Lake Louisa Sunken Turpentine Boat			
	Lake Griffin Canoe #1			
	Lake Griffin Canoe #2			
	Getout Creek Canoe			
	Millstone Plantation Canoe #1			

Publication (Author, Year)	Canoe Name/#	Volumetric Coef	Midships Coef	Block Coef
	Millstone Plantation Canoe #2			
	Isolate Canoe Site (Liberty Co., FL)			
	Pine Island Ctr/Three Canoe Site			
	Manatee Springs Canoe (Levy Co., FL)			
	Key West Canoe (Monroe Co., FL)			
	Big Pine Key Canoe			
	Unid. Hull #2			
	Ocala National Forest Canoe (Marion Co., FL)			
	Oklawaha River Canoe #1			
	Oklawaha River Canoe #4			
	Oklawaha River Canoe #5			
	Withlacoochee River Canoe #3			
	Lake Bryant Canoe #1			
	Lake Apopka Canoe #2 (Orange Co., FL)			
	John's Lake Canoe #1			
	John's Lake Canoe #2			
	King Lake East Canoe (Paseo Co. FL)			
	Hillsboro Riv. Canoe/Barnhill Canoe(PalmBeach)			
	Lake Osborne Canoe			
	Lake Hollingsworth Canoe (group of 14)			
	Crooked Lake Canoe #4 (Polk Co., FL)			
	Lake Agnus Canoe			
	Lake Rosalie Canoe Group			
	Florahome Canoe #1 (Putnam Co., FL)			
	Florahome Canoe #2			
	Florahome Canoe #3			
	Little Orange Lake Canoe #1			
	Lake Galilee Canoe #1			
	Lake Galilee Canoe #2			
	Lake Galilee Canoe #3			
	Georges Lake Canoe #1			
	Brantly Lake Canoe			
	Satsuma Lake Canoe (miniature canoe)			
	Lake Cambo Canoe			
	Two Mile Pond Canoe			
	Mariner Lake Canoe			
	Ashley Lake Canoe #1			
	Goose Lake Canoe #1			
	Goose Lake Canoe #4			
	Brite Lake Canoe			
	Oklawaha River Canoe #6			
	Stokes Pond Canoe Group (5)			
	Bear Lake Canoes (3)			
	Withlacoochee River Canoe #2			
	Seville Canoe			
	Thornhill Lake Canoe			
	Tomoka River Canoe			

Publication (Author, Year)	Canoe Name/#	Date	Type of Wood
Brose and Greber, 1982	Ringler	3550+/-70 BP	White Oak
Alford, 1992	Doodle	1820	Cypress
	Unnamed	1850	Cypress
	Bridgeton hull		
Carter, et al, 1982	Uniacke Lake, Nova Scotia		
Barnett, 1984	Homochitto River Canoe #2, MS	AD1855+/-30;AD1825+/-95;AD1910+/-65	Bald Cypress
	MS Delta Area; OCM	1870+/-10	
	Picayune, MS	1920+/-10	
Pittman and Lipe, 1972	Black Lake, Elizabethtown, NC	1005	yellow pine
Wheeler, et al, 2003	Newnan's Lake:		
	1	2570+/-50 BP	pine
	2	3320+/-60 BP	pine
	3	530-900 BP	
	4	540-900 BP	
	5	540-900 BP	
	6	540-900 BP	
	7	550-1000 BP	
	8	900-1000 BP	
	9	900-1200 BP	
	10	900-1300 BP	
	11	2610+/-60 BP	pine
	12	3690+/-50 BP	pine
	13	2250-2750 BP	
	14	3440+/-60 BP	pine
	15	2400+/-60 BP	taxodium distichum
	16	3570+/-60 BP	pine
	17	4090+/-60 BP	pine
	18	3730+/-60 BP	gymnospermae
	19	3140+/-60 BP	pine
	20	3540+/-60 BP	pine
	21	3870+/-60 BP	pine
	22	3090+/-60 BP	pine
	23	3540+/-60 BP	pine
	24	3530+/-70 BP	gymnospermae
	25	3480+/-60 BP	pine
	26	3470+/-60 BP	pine
	27	3310+/-60 BP	pine
	28	4210+/-60 BP	pine
	29	3600-4000 BP	
	30	3650+/-60 BP	pine
	31	3970+/-80 BP	gymnospermae
	32	3520+/-60 BP	pine
	33	3700-4000 BP	
	34	3600+/-80 BP	gymnospermae
	35	3570+/-60 BP	pine
	36	3500+/-60 BP	pine
	43	4370+/-80 BP	pine
	45	3620+/-60 BP	pine
	49	3480+/-60 BP	pine

Publication (Author, Year)	Canoe Name/#	Date	Type of Wood
	54	3880+/-50 BP	pine
	55	3290+/-70 BP	pine
	61	2370+/-70 BP	gymnospermae
	70	3750+/-60 BP	pine
	71	3800+/-70 BP	pine
	72	3430+/-60 BP	pine
	73	3450+/-70 BP	pine
	74	3990+/-70 BP	pine
	76	3970+/-80 BP	pine
	77		
	78		
	79	3660+/-70 BP	gymnospermae
	80	3680+/-60 BP	pine
	81		
	95	3620+/-60 BP	N/A
	DeLeon Springs 2	6050+/-60 BP	taxodium distichum
	DeLeon Springs 1	5140+/-100 BP	pine
	Lake Galilee 5	4990+/-50 BP	pine
	Harney Flats Canoe (FL)	3950+/-70 BP	pine
	Davis Florahome 4	3880+/-80 BP	pine
	Lake Monroe	3750+/-60 BP	pine
	Stricklin 17	3505+/-60 BP	pine
	Lake Louisa 1	3400+/-60 BP	
	Lake Louisa 2	3380+/-60 BP	
	IMC 1	3350+/-60 BP	pine
	Lakeland	3040+/-115 BP	pine
	Davis Florahome 5	2965+/-55 BP	pine
Wendy Weaver, email	Altamaha, GA canoe	est. 1700-1800	Cypress
	farmer watering trough	unknown	unknown/cypress
Jo Miles-Seeley, 1995	Swan Lake Canoe (Mississippi)	400-500BP/Mississippian Per.;304+/-44BP	Bald Cypress
Noel R. Stowe, 1974	Gulf Coast Canoe #1(Mobile, AL)	605+/-60 BP(1345 AD)	prob. Cypress
	Gulf Coast Canoe #2 (Van Cleave, MS)	ukwn. Used from 1900-50	unknown
	Gulf Coast Canoe #3 (Cedar Creek, MS)	unknown	poss. Pine
	Gulf Coast Canoe #4(Pascagoula, MS)	unknown	unknown
Sam McGahey, 1986 (All MS)	Homochitto Canoe #1	AD1465+/-60; 485+/-60 BP	Bald Cypress
	Georgetown Canoe (Pearl River, MS)	AD1610+/-70; 340+/-70 BP	Bald Cypress
	Shubuta Canoe (Chickasawhay River, MS)	AD1670+/-45; 280+/-45 BP	Bald Cypress
	Malone Lake Canoe	AD1670+/-50; 280+/-50 BP	Cypress
	East Pearl Canoe #1 (Pearl River, MS)	AD1765+/-45	T. distichum
	Steele Bayou Canoe	AD1765+/-55; 175+/-55 BP	T. distichum
	Linday Canoe (Tombigbee River, MS)	AD1800+/-55; 150+/-55 BP	white pine
	Pascagoula River Canoe #1		prob. Baldcypress
	Greenwood Canoe (Tallahatchi River, MS)	used in 1930's?	Tupelo Gum
Anne Marie Plane, 1991 (MA)	Weymouth Great Pond logboat		
	Hopkinton logboat (Jo-Sylvia Lake, MA)		
Allen R. Saltus (MS & LA)	"Keel" Pascagoula River canoe, MS		Cypress
	Carolina Bluff Canoe (Red River, LA)		Bald Cypress
Mark Joseph Hartmann, 1996	DeLeon I (Florida)	5915+/-100 BP	Southern Hard/Yellow Pine
	DeLeon II (Florida)	6050+/-60 BP	Bald Cypress
	Lake Galilee 4 (Florida)	4990+/-50 BP	pinus spp.

Publication (Author, Year)	Canoe Name/#	Date	Type of Wood
	Florahome 4 (FL)	3880+/-? BP	pine
	Stricklin 18 (FL)	3505+/-60 BP	
	Lakeland (IMC)	3350+/-60 BP	
	Swisher (Putnam County, FL)	1635+/-60 BP	Southern Hard Pine
	Cowpen Lake	1160+/-65 BP	Pine
	Magnolia Lake	1060+/-50 BP	Pine
	Dog Island	1240+/-80 BP	Southern Hard Pine
	Tucker Lake 2	1225+/-70 BP	pine
	Zellwood I	1185+/-60 BP	Pine
	Hampton Lake I	1180+/-50 BP	
	Loch Low Lake Canoe (FL)	1160+/-80 BP	Pine?
	Wildent Lake	1160+/-50 BP	Pine
	Little Shady Lake	1135+/-50 BP	Pine
	Lake Kissimmee	1135+/-40 BP	Pine
	Pine Lakes	1120+/-50 BP	Pine
	Little Orange Lake 3	945+/-35 BP	Pine
	Red River (LA)	915+/-67 BP	T. distichum
	Silver River (FL)	880+/-45 BP	Pine
	Tucker Lake 4	870+/-50 BP	Pine
	Micanopy 2	870+/-35 BP	Pine
	Long Pond	855+/-45 BP	Pine
	Suwannee 3	850+/-50 BP	T. distichum
	Goose Lake 3	845+/-65 BP	Pine
	Lake Griffin 3	840+/-55 BP	T. distichum
	Grandin	825+/-50 BP	Pine
	Micanopy 1	775+/-65 BP	Pine
	Little Orange Lake 2	750+/-55 BP	Pine
	Stricklin 14 (FL)	740+/-60 BP	
	Fluker's Bluff (LA)	728+/-50 BP	T. distichum
	Grassy Lake (FL)	720+/-55 BP	Pine
	Keuka Lake (FL)	690+/-50 BP	Pine
	Hartman Lake (FL)	660+/-70 BP	
	Stricklin 10 (FL)	630+/-10 BP	
	Georges Lake 2 (FL)	610+/-50 BP	Pine
	Tombigbee I (AL)	605+/-60 BP	T. distichum
	Goose Lake 2 (FL)	590+/-45 BP	Pine
	Tucker Lake I (FL)	575+/-60 BP	
	Hull Lake I (FL)	575+/-50 BP	Pine
	Goose Lake 5 (FL)	500+/-50 BP	Pine
	Suwannee River 2 (FL)	470+/-80 BP	Pine
	Crooked Lake 3 (FL)	440+/-50 BP	
	Hancock Lake (FL)	380+/-50 BP	Pine
	Lake Salvador 2 (LA) 16SC49	346+/-83 BP	T. distichum
	Stricklin 4 (FL)	320+/-80 BP	Pine
	Texas Memorial Museum (TX)	100+/-60 BP	Salicacea (cottonwood)
	High Springs Canoe (FL)		
	Econonfina Creek Canoe (FL)		
	Hampton Lake I Canoe	1180+/-50 BP	
	Lake Washington Canoe (FL)	historic?	prob. Cypress?
	Fort Lauderdale Canoe (FL)		

Publication (Author, Year)	Canoe Name/#	Date	Type of Wood
	Lake Inverness Canoe (FL)	Seminole?	prob. Cypress?
	Brooklyn Lake Canoe (FL)	prehistoric?	prob. Baldcypress?
	Seminole Lake Canoe 2 (FL)		
	Dade County Canoe (FL)	historic?	
	Etheridge Canoe (FL)	prehistoric?	Pine
	Pensacola Canoe (FL)	historic?	
	Carrabelle/Dog Island Canoe (FL)	1240+/-80 BP	
	"Hatian Canoe" Gasden Co., FL		
	Lake Wimico Canoe (FL)	historic?	cypress?
	Silver Lake Canoe (FL)		
	Nautta Rise Canoe (FL)		
	Crows Bluff Canoe (FL)		
	Lee County Canoe (FL)		
	Waccasassa River Canoe (FL)		
	Delancy Canoe (FL)	modern	Southern Hard Pine
	Jupiter Island Canoe (FL)	historic seminole?	
	Grassy Key Canoe (FL)	historic?	Bombacacae/Cebia Corkwood
	Lake Apopka 1 (FL)		
	Zellwood Frags 2	1185+/-75 BP	Southern Hard Pine
	Zellwood Frag 3	1185+/-75 BP	Southern Hard Pine
	Lake Preston Canoe (FL)		Southern Hard Pine
	St. Petersburg Canoe (FL)	historic, less than 200 years old?	T. distichum
	Crooked Lake Canoe 1 (FL)	AD 1150; 800+/-70 BP	Southern Hard Pine
	Florida Rock Canoe (FL)	prehistoric?	Hard Pine
	Adams Ranch Canoe (FL)		
	Escambia Bay Canoe (FL)	500-1500 years old--unreliable	
	Hillary Peat Canoe (FL)		
	Suwannee River Canoe Bottm&end frag		
	Daytona Beach/Orange City Canoe (FL)	historic?	Pine
	Albany Canoe (FL)		
	Cumberland Canoe (FL)		
	Pridgen Canoe (Bladen Co. NC)	1980+/-60 BP	Yellow Pine
	Battery Island Canoe (NC) 0079CFR		Yellow Pine
	Waccamaw Canoe #1 (NC)	140+/-55 BP	Yellow Pine
	Tyson Canoe #1 (NC-Cape Fear Mus)	1470+/-60 BP	
	Manteo Marine Resources Center Canoe		Yellow Pine
	Goodwind Canoe (Carolina Beach Inlet, NC)	Prehistoric	
Hartmann plus my own research	Cottle Half Moon (Onslow Co. Canoe NC)	750+/-50 BP; 1240 AD	Cypress
	Valenti Canoe (NC) Lumber River 0001LUR	1020+/-60 BP	Yellow Pine
	Lake Phelps Canoe #1 0001PHL	2720+/-70 BP	Bald Cypress
	Lake Phelps 30ft 0002PHL	2850+/-60 BP	Bald Cypress
	Lake Phelps; Butler Canoe 0003PHL	550+/-60 BP	Bald Cypress
	Lake Phelps; Pond Canoe 0004 PHL	1610+/-60 BP	Bald Cypress
	Lake Phelps #5	1760+/-60 BP	Bald Cypress
	Lake Phelps #6	1720+/-60 BP	Bald Cypress
	Lake Phelps #7	4380+/-70 BP	Bald Cypress
	Lake Phelps #8	1840+/-60 BP	Bald Cypress
	Lake Phelps #9	3230+/-110 BP	Bald Cypress
	Lake Phelps #10	1530+/-60 BP	Bald Cypress
	Lake Phelps #11	1790+/-70 BP	Bald Cypress

Publication (Author, Year)	Canoe Name/#	Date	Type of Wood
	Lake Phelps #12		Bald Cypress
	Lake Phelps #13	560+/-60 BP	Bald Cypress
	Lake Phelps #14		Bald Cypress
	Lake Phelps #15	1630+/-60 BP	Bald Cypress
	Lake Phelps #16	1980+/-70 BP	Bald Cypress
	Lake Phelps #17	2090+/-60 BP	Bald Cypress
	Lake Phelps #18	750+/-80 BP	Bald Cypress
	Lake Phelps #19	1740+/-60 BP	Bald Cypress
	Lake Phelps #20	1580+/-50 BP	Bald Cypress
	Lake Phelps #21	3060+/-70 BP	Bald Cypress
	Lake Phelps #22		Bald Cypress
	Swartz's Dog Pen Canoe Lake Phelps 0025PHL		
The Mariner's Museum Research	BF26 Haida Nation, Queen Charlotte Is.	built 1937	Cedar
	BU51 Powhatan Creek, VA	1630	pine
	BU 37 Lake Michigan	19th century?	
	BU 16 Lake Champlain, NY-VT	19th century?	
	BU 6 Cayuga Lake, NY(log) used in CT	c 1832	pine?
	BU 14 Dismal Swamp;used on Lake Drummond	made by Fletcher Lassiter who died in 1920	cypress?
	BF 24 La Conner, WA	"La Conner" is written on site	cedar
	BU 13 Pearl River, LA	early 20th cen?	cypress
	#125 Blackwater, VA (disintigrated, missing)		
	BU 8 Pith-lo FL Everglades		cypress
North Carolina UAB records	Webber Canoe, Pamlico River 0030PMR	Historic	Bald Cypress
	Elwell's Ferry Canoe NW Cape Fear River	Historic	pine
	Futch Creek Canoe 0001MDS	Historic	Bald Cypress
	Waccamaw Canoe #3 0003WAL	230+/-50 BP	
	Coinjock Canoe 0001COS	Historic	pine
	Batson Canoe Topsail Sound 0001TPS	Historic	Bald Cypress
	Carter Canoe, North Landing River 0001NLR	Historic	Pine
	Lower Little River Canoe 0071CFR	Historic	Cedar
	Ruffin Canoe, Tar River, Edgecombe 0016TRR	Historic	Pine
	#1-1905 White Lake 0001WHL	960+/-50BP	Pine
	#2-1906 Singletary lake 0002WHL	840+/-70 BP	Pine
	#3-1907 Singletary lake 0003WHL	960+/-50 BP	Pine
	#4-1908 White Lake 0004WHL	Prehistoric	Pine
	Pridgen Canoe fragment White Lake 0006WHL	Prehistoric	pine
	Fayetteville Road canoe white Lake 0007WHL	Prehistoric	Pine
	Carolyn Tanner Canoe White Lake 0008WHL	Prehistoric	Pine
	Mary Shaw Canoe White Lake 0009WHL	Prehistoric	Pine?
	Big Jim Canoe White Lake 0010WHL	Prehistoric	Cypress?
	Linton Canoe; Lake Waccamaw 0002WAL		
	Jasper Davis Canoe;Tar River RckyMtMillsDam		
	Shrimp Net Canoe, 0080CFR		Yellow Pine
	Tyson Canoe #2, Gray's Creek 0069CFR	Prehistoric	
	Black Lake Canoe #1; 0001BKL	Historic	Bald Cypress
	Black Lake Canoe #2; 0002BKL	Historic	Bald Cypress
	Black Lake Canoe #3; 0003BKL	Historic	
	Jones Lake Canoe #1		
	Andrew Lanier Canoe, Tar River		
	Rocky Mount Canoe #1; Tar River		Bald Cypress

Publication (Author, Year)	Canoe Name/#	Date	Type of Wood
	Rocky Mount Canoe #2; Tar River		Bald Cypress
	Rocky Mount Canoe #3; Tar River		Bald Cypress
	Strickland Canoe; Lake Waccamaw	560+/-50 BP	Bald Cypress
	Lambeth Canoe; Tar River		Pine
Georgia Research Trip	Savannah History Museum #1	early 1900's	Cypress
	Savannah History Museum #2	made in 1870 according to oral hist	Cypress
	Massie School Logboat	400 years old?	
	Cumberland Island NS Logboat #1		Pine or Cypress?
	Thronateeska Heritage Museum Logboat #1	prehistoric?	
	Thronateeska Heritage Museum Logboat #2		
	Timucuan Preserve Logboat (FL)		prob. Pine?
	Altamaha River Logboat (Brockington&Assoc)	Historic 1700-1800?	cypress
	Personal Chine-Girder logboat (B&A)		
	Funk Heritage Center Logboat	400-1000 yers old?	cypress
	Oconee Heritage Center Logboat; SC	AD 1760 +/- 40 yrs	Southern Yellow Pine
Robin Moore, 2005, pers comm	Canoe in Gator Enclosure (St. Augustine, FL)		
South Carolina Trip Research	Old Santee Canal Park Logboat		Cypress
	Charleston Mus. Logboat #1	historic	cypress
	Charleston Mus. Plantation Barge "Bessie"	c. 1855	cypress
	38BU103 Beaufort R. + Chowan Crk. Logboat	prehistoric	
	38BU57 Hemmings/Boyer logboat	historic	pine
	38CH57/38CN171 Dunlap logboat		
	38HA144 Chimlee Lake Logboat		cypress
	38SU22 Cut Dam Canoe		pine
	38GE90 T.B. Canoe site	historic	
	38GE82 "Roots" Logboat(SC State Mus)	historic	cypress
	38DR36 Kizer/Judy logboat		cypress
	38CN84 Ferguson logboat		cypress
	38BK345 Bob's logboat		
	38BK164 East Branch Cooper River		
	38CN83/38CN38 Chessey Creek Logboat		cypress
	38CN19 Strickland Canoe		
	Ft. Jackson Logboat		black cypress
	Kevin Rooney's Canoe hobby lic. 1288		
	Lowe Canoe #1		
	Lowe Canoe #2		
	Lowe Canoe #3		
	Georgetown Canoe (Tom Davis)		
	Drew Ruddy Canoe		
	Dan Ellis Canoe		
	Charles Towne Landing Logboat #2		cypress
	Wilford Logboat #1		pine
	Wilford Logboat #2		pine?
	Wilford Logboat #3		
	Hilton Head Canoe #1	prehistoric	pine
	Hilton Head Canoe #2	930+/-90 years BP	pine
	Hilton Head Canoe #3	930+/-90 years BP	pine
	Parris Island Logboat/Cooler Canoe		
	38SU8 Logboat site		
	Horry County Mus. #1		cypress

Publication (Author, Year)	Canoe Name/#	Date	Type of Wood
	Horry County Mus. #2		cypress
	Horry County Mus. #3		cypress
Virginia DHR files	Upper Machodoc Creek logboat (Ken Busby)		
	South Anna River logboat 1 (Kenneth Lancaster)		pine
	South Anna River logboat 2 (Kattie Bowells)		
	Blackwater River logboat 1 (Minton and Bell)	historic	
	Blackwater River logboat 2 (Charles Lee Bell)	historic	
	Blackwater River logboat 3(J. Richard Andrews)		
	Blackwater River logboat 4(J. Richard Andrews)		
Florida State Site Files	Moon Lake Canoe #2 (Alachua Co. FL)	historic	cypress
	Watermelon Pond Canoe (Alachua Co, FL)	630+/- 50 BP	
	Orange Lake Canoe #1	historic	cypress
	Orange Lake Canoe #2	historic	pine
	Town Lake Canoe	historic	pine
	Lake Elizabeth Canoe		
	Levy Lake Canoe		
	Morris Canoe	630+/-50 BP	
	Hampton Lake #2	prehistoric	
	Hampton Lake #3	1000+/-60 BP	
	Crosby Lake Canoe #1	1240+/-60 BP	
	Crosby Lake Canoe #2		
	Griffith Canoe (Bradford Co., FL)	2250+/-60 BP	
	Otter Creek Canoe #1 (Bay Co., FL)		
	White Western Lake Canoe	1210+/-40 BP	
	Pat's Elbow Canoe (Citrus Co., FL)		
	Gatorbone Lake Canoe	765+/-50 BP	pine
	Lake Geneva Canoe #1 (Clay Co., FL)		
	Lake Geneva Canoe #2		
	Lake Geneva Canoe #3		
	Glisson Lake Canoe		
	Hall Lake Canoe #1	575+/-50 BP	pine
	Hall Lake Canoe #2		pine
	Hall Lake Canoe #3		pine
	Hall Lake Canoe #4		
	"Gun Dump" Site/Seminole Lake Canoes (3)		
	Brett Canoe		
	Miami Area Canoe (Dade Co., FL)		yellow poplar
	Lord Nelson Canoe (Dural Co, FL)		
	Arbuckle Creek Canoe #2) (Highlands Co.)	450+/-40 BP	
	Arbuckle Creek Canoe #1	380+/-40 BP	
	Central Florida Canoe (Hillsborough Co., FL)		cypress
	Hillsborough County Canoe		
	Mr. Daniel's Canoe	prehistoric	
	Bishop Clark Canoe (Jefferson Co., FL)		
	Wildcat Lake Canoe (Lake Co, FL)	1160+/-65 BP	cypress
	Lake Louisa Sunken Turpentine Boat		
	Lake Griffin Canoe #1	historic	cypress
	Lake Griffin Canoe #2		
	Getout Creek Canoe		
	Millstone Plantation Canoe #1		

Publication (Author, Year)	Canoe Name/#	Date	Type of Wood
	Millstone Plantation Canoe #2		
	Isolate Canoe Site (Liberty Co., FL)		
	Pine Island Ctr/Three Canoe Site		
	Manatee Springs Canoe (Levy Co., FL)		
	Key West Canoe (Monroe Co., FL)	historic	
	Big Pine Key Canoe	historic	
	Unid. Hull #2	1903	cypress
	Ocala National Forest Canoe (Marion Co., FL)	historic	pine
	Oklawaha River Canoe #1		Southern Hard Pine
	Oklawaha River Canoe #4		Southern Hard Pine
	Oklawaha River Canoe #5	modern	bald cypress
	Withlacoochee River Canoe #3	historic	cypress
	Lake Bryant Canoe #1	1400+/-50 BP	
	Lake Apopka Canoe #2 (Orange Co., FL)		pine
	John's Lake Canoe #1	prehistoric	pine
	John's Lake Canoe #2		
	King Lake East Canoe (Paseo Co. FL)		
	Hillsboro Riv. Canoe/Barnhill Canoe(PalmBeach)		
	Lake Osborne Canoe		
	Lake Hollingsworth Canoe (group of 14)		
	Crooked Lake Canoe #4 (Polk Co., FL)	990+/-45 BP	Southern Hard Pine
	Lake Agnus Canoe		Southern Hard Pine
	Lake Rosalie Canoe Group	1580+/-40 BP	
	Florahome Canoe #1 (Putnam Co., FL)	prehistoric	
	Florahome Canoe #2		cypress
	Florahome Canoe #3		
	Little Orange Lake Canoe #1		pine
	Lake Galilee Canoe #1		
	Lake Galilee Canoe #2	prehistoric	pine
	Lake Galilee Canoe #3		pine
	Georges Lake Canoe #1		cypress
	Brantly Lake Canoe	prehistoric	pine
	Satsuma Lake Canoe (miniature canoe)	510+/-40 BP	bald cypress
	Lake Cambo Canoe	prehistoric	pine
	Two Mile Pond Canoe	prehistoric	pine
	Mariner Lake Canoe	prehistoric	pine
	Ashley Lake Canoe #1	1090+/-45 BP	Southern Hard Pine
	Goose Lake Canoe #1	prehistoric	Southern Hard Pine
	Goose Lake Canoe #4	500+/-50 BP	Southern Hard Pine
	Brite Lake Canoe		Southern Hard Pine
	Oklawaha River Canoe #6	historic	
	Stokes Pond Canoe Group (5)		
	Bear Lake Canoes (3)		
	Withlacoochee River Canoe #2		bald cypress
	Seville Canoe		bald cypress
	Thornhill Lake Canoe	historic	bald cypress
	Tomoka River Canoe		

Publication (Author, Year)	Canoe Name/#	End dist.	End shape	Keel Line
Brose and Greber, 1982	Ringler	no	spoon	flat
Alford, 1992	Doodle	yes	pointed spoon/square	flat
	Unnamed	yes	pointed spoon/square	flat
	Bridgeton hull	yes	pointed spoon/square	
Carter, et al, 1982	Uniacke Lake, Nova Scotia	yes	spoon/wineglass	flat
Barnett, 1984	Homochitto River Canoe #2, MS	no	pointed angle	flat
	MS Delta Area; OCM			
	Picayune, MS			
Pittman and Lipe, 1972	Black Lake, Elizabethtown, NC	n/a	spoon	
Wheeler, et al, 2003	Newnan's Lake:			
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	2			
	3			
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	45			
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Publication (Author, Year)	Canoe Name/#	End dist.	End shape	Keel Line
	54			
	55			
	61			
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	76			
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	78			
	79			
	80			
	81			
	95			
	DeLeon Springs 2			
	DeLeon Springs 1			
	Lake Galilee 5			
	Harney Flats Canoe (FL)			
	Davis Florahome 4			
	Lake Monroe			
	Stricklin 17			
	Lake Louisa 1			
	Lake Louisa 2			
	IMC 1			
	Lakeland			
	Davis Florahome 5			
Wendy Weaver, email	Altamaha, GA canoe			
	farmer watering trough			split dugout
Jo Miles-Seeley, 1995	Swan Lake Canoe (Mississippi)			flat
Noel R. Stowe, 1974	Gulf Coast Canoe #1(Mobile, AL)			flat
	Gulf Coast Canoe #2 (Van Cleave, MS)			
	Gulf Coast Canoe #3 (Cedar Creek, MS)			flat
	Gulf Coast Canoe #4(Pascagoula, MS)			
Sam McGahey, 1986 (All MS)	Homochitto Canoe #1			flat
	Georgetown Canoe (Pearl River, MS)			flat
	Shubuta Canoe (Chickasawhay River, MS)			flat
	Malone Lake Canoe			flat
	East Pearl Canoe #1 (Pearl River, MS)			flat
	Steele Bayou Canoe			
	Linday Canoe (Tombigbee River, MS)			
	Pascagoula River Canoe #1			
	Greenwood Canoe (Tallahatchi River, MS)			
Anne Marie Plane, 1991 (MA)	Weymouth Great Pond logboat			flat
	Hopkinton logboat (Jo-Sylvia Lake, MA)			flat
Allen R. Saltus (MS & LA)	"Keel" Pascagoula River canoe, MS			
	Carolina Bluff Canoe (Red River, LA)			flat
Mark Joseph Hartmann, 1996	DeLeon I (Florida)			
	DeLeon II (Florida)			
	Lake Galilee 4 (Florida)			

Publication (Author, Year)	Canoe Name/#	End dist.	End shape	Keel Line
	Florahome 4 (FL)			
	Stricklin 18 (FL)			
	Lakeland (IMC)			
	Swisher (Putnam County, FL)			
	Cowpen Lake			
	Magnolia Lake			
	Dog Island			
	Tucker Lake 2			
	Zellwood I			
	Hampton Lake I			
	Loch Low Lake Canoe (FL)			
	Wildent Lake			
	Little Shady Lake			
	Lake Kissimmee			
	Pine Lakes			
	Little Orange Lake 3			
	Red River (LA)			flat
	Silver River (FL)			flat
	Tucker Lake 4			
	Micanopy 2			
	Long Pond			
	Suwannee 3			
	Goose Lake 3			
	Lake Griffin 3			
	Grandin			
	Micanopy 1			
	Little Orange Lake 2			flat
	Stricklin 14 (FL)			
	Fluker's Bluff (LA)			flat
	Grassy Lake (FL)			flat
	Keuka Lake (FL)			
	Hartman Lake (FL)			
	Stricklin 10 (FL)			
	Georges Lake 2 (FL)			
	Tombigbee I (AL)			flat
	Goose Lake 2 (FL)			
	Tucker Lake I (FL)			
	Hull Lake I (FL)			
	Goose Lake 5 (FL)			
	Suwannee River 2 (FL)			
	Crooked Lake 3 (FL)			
	Hancock Lake (FL)			
	Lake Salvador 2 (LA) 16SC49			flat
	Stricklin 4 (FL)			
	Texas Memorial Museum (TX)			flat
	High Springs Canoe (FL)			
	Econonfina Creek Canoe (FL)			
	Hampton Lake I Canoe			
	Lake Washington Canoe (FL)			
	Fort Lauderdale Canoe (FL)			

Publication (Author, Year)	Canoe Name/#	End dist.	End shape	Keel Line
	Lake Inverness Canoe (FL)			
	Brooklyn Lake Canoe (FL)			
	Seminole Lake Canoe 2 (FL)			
	Dade County Canoe (FL)			
	Etheridge Canoe (FL)			
	Pensacola Canoe (FL)			
	Carrabelle/Dog Island Canoe (FL)			
	"Hatian Canoe" Gasden Co., FL			
	Lake Wimico Canoe (FL)			
	Silver Lake Canoe (FL)			
	Nautta Rise Canoe (FL)			
	Crows Bluff Canoe (FL)			
	Lee County Canoe (FL)			
	Waccasassa River Canoe (FL)			
	Delancy Canoe (FL)			
	Jupiter Island Canoe (FL)			
	Grassy Key Canoe (FL)			
	Lake Apopka 1 (FL)			
	Zellwood Frags 2			
	Zellwood Frag 3			
	Lake Preston Canoe (FL)			flat
	St. Petersburg Canoe (FL)			flat
	Crooked Lake Canoe 1 (FL)			
	Florida Rock Canoe (FL)			
	Adams Ranch Canoe (FL)			
	Escambia Bay Canoe (FL)			
	Hillary Peat Canoe (FL)			
	Suwannee River Canoe Bottm&end frag			
	Daytona Beach/Orange City Canoe (FL)			
	Albany Canoe (FL)			
	Cumberland Canoe (FL)			
	Pridgen Canoe (Bladen Co. NC)			
	Battery Island Canoe (NC) 0079CFR			
	Waccamaw Canoe #1 (NC)			
	Tyson Canoe #1 (NC-Cape Fear Mus)			
	Manteo Marine Resources Center Canoe			
	Goodwind Canoe (Carolina Beach Inlet, NC)			
Hartmann plus my own research	Cottle Half Moon (Onslow Co. Canoe NC)	yes	pointed spoon/spoon	flat
	Valenti Canoe (NC) Lumber River 0001LUR			
	Lake Phelps Canoe #1 0001PHL			
	Lake Phelps 30ft 0002PHL			
	Lake Phelps; Butler Canoe 0003PHL	n/a	overhanging platform	
	Lake Phelps; Pond Canoe 0004 PHL	n/a	pointed angle	rocker
	Lake Phelps #5	n/a	rounded angle	
	Lake Phelps #6	n/a	rounded angle	
	Lake Phelps #7	n/a	rounded angle	
	Lake Phelps #8	n/a	rounded angle	
	Lake Phelps #9	n/a	rounded angle	
	Lake Phelps #10	yes	spoon/pointed angle	
	Lake Phelps #11	yes	pointed spoon/spoon	

Publication (Author, Year)	Canoe Name/#	End dist.	End shape	Keel Line
	Lake Phelps #12			
	Lake Phelps #13	n/a	spoon	
	Lake Phelps #14			
	Lake Phelps #15	n/a	spoon	
	Lake Phelps #16	n/a	spoon	
	Lake Phelps #17	n/a	spoon	
	Lake Phelps #18	n/a	spoon	
	Lake Phelps #19	n/a	pointed spoon	
	Lake Phelps #20	n/a	spoon	
	Lake Phelps #21	n/a	spoon	
	Lake Phelps #22			
	Swartz's Dog Pen Canoe Lake Phelps 0025PHL			
The Mariner's Museum Research	BF26 Haida Nation, Queen Charlotte Is.			
	BU51 Powhatan Creek, VA	no	spoon	flat
	BU 37 Lake Michigan	no	pointed spoon	flat
	BU 16 Lake Champlain, NY-VT	yes	pointed spoon/square	flat
	BU 6 Cayuga Lake, NY(log) used in CT	no	pointed spoon	flat
	BU 14 Dismal Swamp;used on Lake Drummond	no	pointed spoon	flat
	BF 24 La Conner, WA			flat
	BU 13 Pearl River, LA			flat
	#125 Blackwater, VA (disintigrated, missing)			
	BU 8 Pith-lo FL Everglades			flat
North Carolina UAB records	Webber Canoe, Pamlico River 0030PMR			rocker
	Elwell's Ferry Canoe NW Cape Fear River			flat
	Futch Creek Canoe 0001MDS			
	Waccamaw Canoe #3 0003WAL			
	Coinjock Canoe 0001COS			
	Batson Canoe Topsail Sound 0001TPS			raked transom
	Carter Canoe, North Landing River 0001NLR			
	Lower Little River Canoe 0071CFR			
	Ruffin Canoe, Tar River, Edgecombe 0016TRR			flat
	#1-1905 White Lake 0001WHL			
	#2-1906 Singletary lake 0002WHL			
	#3-1907 Singletary lake 0003WHL			
	#4-1908 White Lake 0004WHL			
	Pridgen Canoe fragment White Lake 0006WHL			
	Fayetteville Road canoe white Lake 0007WHL			
	Carolyn Tanner Canoe White Lake 0008WHL			
	Mary Shaw Canoe White Lake 0009WHL			
	Big Jim Canoe White Lake 0010WHL			
	Linton Canoe; Lake Waccamaw 0002WAL			
	Jasper Davis Canoe;Tar River RckyMtMillsDam			
	Shrimp Net Canoe, 0080CFR			
	Tyson Canoe #2, Gray's Creek 0069CFR			
	Black Lake Canoe #1; 0001BKL			flat
	Black Lake Canoe #2; 0002BKL			flat
	Black Lake Canoe #3; 0003BKL			
	Jones Lake Canoe #1			
	Andrew Lanier Canoe, Tar River			
	Rocky Mount Canoe #1; Tar River			

Publication (Author, Year)	Canoe Name/#	End dist.	End shape	Keel Line
	Rocky Mount Canoe #2; Tar River			
	Rocky Mount Canoe #3; Tar River			
	Strickland Canoe; Lake Waccamaw			
	Lambeth Canoe; Tar River			
Georgia Research Trip	Savannah History Museum #1	no	pointed angle	flat
	Savannah History Museum #2	yes	pointed angle/square	flat
	Massie School Logboat	no	pointed angle	flat
	Cumberland Island NS Logboat #1	n/a	overhanging platform	flat
	Thronateeska Heritage Museum Logboat #1			flat
	Thronateeska Heritage Museum Logboat #2			flat
	Timucuan Preserve Logboat (FL)			
	Altamaha River Logboat (Brockington&Assoc)	no	pointed angle	flat
	Personal Chine-Girder logboat (B&A)			
	Funk Heritage Center Logboat	yes	pointed spoon/square	flat
	Oconee Heritage Center Logboat; SC			flat
Robin Moore, 2005, pers comm	Canoe in Gator Enclosure (St. Augustine, FL)			
South Carolina Trip Research	Old Santee Canal Park Logboat			flat
	Charleston Mus. Logboat #1	no	pointed spoon	flat
	Charleston Mus. Plantation Barge "Bessie"	yes	pointed angle/square	flat
	38BU103 Beaufort R. + Chowan Crk. Logboat			
	38BU57 Hemmings/Boyer logboat			
	38CH57/38CN171 Dunlap logboat			
	38HA144 Chimlee Lake Logboat			
	38SU22 Cut Dam Canoe	n/a	pointed spoon	
	38GE90 T.B. Canoe site			
	38GE82 "Roots" Logboat(SC State Mus)			flat
	38DR36 Kizer/Judy logboat	no	spoon	
	38CN84 Ferguson logboat	yes	pointed spoon/square	
	38BK345 Bob's logboat			
	38BK164 East Branch Cooper River			
	38CN83/38CN38 Chessey Creek Logboat	n/a	spoon	
	38CN19 Strickland Canoe			
	Ft. Jackson Logboat			
	Kevin Rooney's Canoe hobby lic. 1288			
	Lowe Canoe #1			
	Lowe Canoe #2			
	Lowe Canoe #3			
	Georgetown Canoe (Tom Davis)			
	Drew Ruddy Canoe			
	Dan Ellis Canoe			
	Charles Towne Landing Logboat #2			flat
	Wilford Logboat #1			
	Wilford Logboat #2			
	Wilford Logboat #3			
	Hilton Head Canoe #1			
	Hilton Head Canoe #2			
	Hilton Head Canoe #3			
	Parris Island Logboat/Cooler Canoe			
	38SU8 Logboat site			
	Horry County Mus. #1			flat

Publication (Author, Year)	Canoe Name/#	End dist.	End shape	Keel Line
	Horry County Mus. #2			flat
	Horry County Mus. #3			flat
Virginia DHR files	Upper Machodoc Creek logboat (Ken Busby)			
	South Anna River logboat 1 (Kenneth Lancaster)			
	South Anna River logboat 2 (Kattie Bowells)			
	Blackwater River logboat 1 (Minton and Bell)			flat
	Blackwater River logboat 2 (Charles Lee Bell)			
	Blackwater River logboat 3(J. Richard Andrews)			
	Blackwater River logboat 4(J. Richard Andrews)			
Florida State Site Files	Moon Lake Canoe #2 (Alachua Co. FL)	no	overhanging platform	flat
	Watermelon Pond Canoe (Alachua Co, FL)	n/a	pointed angle	
	Orange Lake Canoe #1	yes	pointed spoon/square	flat
	Orange Lake Canoe #2	n/a	overhanging platform	flat
	Town Lake Canoe	yes	pointed spoon/square	flat
	Lake Elizabeth Canoe			
	Levy Lake Canoe	yes	spoon/square	flat
	Morris Canoe			
	Hampton Lake #2	no	overhanging platform	
	Hampton Lake #3	n/a	spoon	
	Crosby Lake Canoe #1	no	overhanging platform	
	Crosby Lake Canoe #2			
	Griffith Canoe (Bradford Co., FL)			flat
	Otter Creek Canoe #1 (Bay Co., FL)			
	White Western Lake Canoe	yes	spoon/pointed spoon	
	Pat's Elbow Canoe (Citrus Co., FL)			
	Gatorbone Lake Canoe			flat
	Lake Geneva Canoe #1 (Clay Co., FL)			
	Lake Geneva Canoe #2			
	Lake Geneva Canoe #3			
	Glisson Lake Canoe			
	Hall Lake Canoe #1	no	spoon	flat
	Hall Lake Canoe #2			
	Hall Lake Canoe #3	n/a	spoon	
	Hall Lake Canoe #4			
	"Gun Dump" Site/Seminole Lake Canoes (3)			
	Brett Canoe	n/a	pointed spoon	
	Miami Area Canoe (Dade Co., FL)			rocker
	Lord Nelson Canoe (Dural Co, FL)			flat
	Arbuckle Creek Canoe #2) (Highlands Co.)			flat
	Arbuckle Creek Canoe #1	n/a	overhanging platform	
	Central Florida Canoe (Hillsborough Co., FL)			
	Hillsborough County Canoe	yes	pointed spoon/wineglass	flat
	Mr. Daniel's Canoe			
	Bishop Clark Canoe (Jefferson Co., FL)	n/a	pointed spoon	flat
	Wildcat Lake Canoe (Lake Co, FL)			flat
	Lake Louisa Sunken Turpentine Boat			
	Lake Griffin Canoe #1			
	Lake Griffin Canoe #2	n/a	overhanging platform	
	Getout Creek Canoe	yes	spoon/overhanging platform	
	Millstone Plantation Canoe #1			

Publication (Author, Year)	Canoe Name/#	End dist.	End shape	Keel Line
	Millstone Plantation Canoe #2			
	Isolate Canoe Site (Liberty Co., FL)			
	Pine Island Ctr/Three Canoe Site			
	Manatee Springs Canoe (Levy Co., FL)			
	Key West Canoe (Monroe Co., FL)			
	Big Pine Key Canoe	yes	pointed spoon/square	flat
	Unid. Hull #2			flat
	Ocala National Forest Canoe (Marion Co., FL)			flat
	Oklawaha River Canoe #1	yes	spoon/square	flat
	Oklawaha River Canoe #4			
	Oklawaha River Canoe #5			flat
	Withlacoochee River Canoe #3			
	Lake Bryant Canoe #1	no	pointed spoon	flat
	Lake Apopka Canoe #2 (Orange Co., FL)			flat
	John's Lake Canoe #1	yes	overhanging platform/square	flat
	John's Lake Canoe #2	yes	overhanging platform/square	
	King Lake East Canoe (Paseo Co. FL)			
	Hillsboro Riv. Canoe/Barnhill Canoe(PalmBeach)			
	Lake Osborne Canoe			
	Lake Hollingsworth Canoe (group of 14)			
	Crooked Lake Canoe #4 (Polk Co., FL)			
	Lake Agnus Canoe	n/a	pointed spoon	flat
	Lake Rosalie Canoe Group			
	Florahome Canoe #1 (Putnam Co., FL)			
	Florahome Canoe #2			
	Florahome Canoe #3			flat
	Little Orange Lake Canoe #1			flat
	Lake Galilee Canoe #1			
	Lake Galilee Canoe #2	n/a	spoon	
	Lake Galilee Canoe #3			flat
	Georges Lake Canoe #1	yes	pointed spoon/overhanging platform	
	Brantly Lake Canoe			
	Satsuma Lake Canoe (miniature canoe)			flat
	Lake Cambo Canoe			
	Two Mile Pond Canoe			
	Mariner Lake Canoe			
	Ashley Lake Canoe #1	no	spoon	flat
	Goose Lake Canoe #1	no	spoon	flat
	Goose Lake Canoe #4	no	overhanging platform	flat
	Brite Lake Canoe			
	Oklawaha River Canoe #6			
	Stokes Pond Canoe Group (5)			
	Bear Lake Canoes (3)			
	Withlacoochee River Canoe #2	yes	pointed spoon/square	flat
	Seville Canoe			
	Thornhill Lake Canoe			
	Tomoka River Canoe			double log flat

Publication (Author, Year)	Canoe Name/#	Bottom Contour	Bottom Shape	Sides
Brose and Greber, 1982	Ringler	straight	U-shaped	concave
Alford, 1992	Doodle	straight	U-shaped	concave
	Unnamed	straight	U-shaped	concave
	Bridgeton hull			
Carter, et al, 1982	Uniacke Lake, Nova Scotia	straight	U-shaped	concave
Barnett, 1984	Homochitto River Canoe #2, MS	straight	squared U-shaped	squared
	MS Delta Area; OCM			
	Picayune, MS			
Pittman and Lipe, 1972	Black Lake, Elizabethtown, NC			
Wheeler, et al, 2003	Newnan's Lake:			
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Publication (Author, Year)	Canoe Name/#	Bottom Contour	Bottom Shape	Sides
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	DeLeon Springs 2			
	DeLeon Springs 1			
	Lake Galilee 5			
	Harney Flats Canoe (FL)			
	Davis Florahome 4			
	Lake Monroe			
	Stricklin 17			
	Lake Louisa 1			
	Lake Louisa 2			
	IMC 1			
	Lakeland			
	Davis Florahome 5			
Wendy Weaver, email	Altamaha, GA canoe			
	farmer watering trough			
Jo Miles-Seeley, 1995	Swan Lake Canoe (Mississippi)	straight	platform style	
Noel R. Stowe, 1974	Gulf Coast Canoe #1(Mobile, AL)	slight uplift	U-shaped	concave
	Gulf Coast Canoe #2 (Van Cleave, MS)			
	Gulf Coast Canoe #3 (Cedar Creek, MS)	straight		
	Gulf Coast Canoe #4(Pascagoula, MS)			
Sam McGahey, 1986 (All MS)	Homochitto Canoe #1	slight uplift	squared U-shaped	squared
	Georgetown Canoe (Pearl River, MS)	straight	squared U-shaped	squared
	Shubuta Canoe (Chickasawhay River, MS)	straight	squared U-shaped	squared
	Malone Lake Canoe	straight	U-shaped	concave
	East Pearl Canoe #1 (Pearl River, MS)	straight	squared U-shaped	squared
	Steele Bayou Canoe		squared U-shaped	squared
	Linday Canoe (Tombigbee River, MS)			
	Pascagoula River Canoe #1			
	Greenwood Canoe (Tallahatchi River, MS)		U-shaped	concave
Anne Marie Plane, 1991 (MA)	Weymouth Great Pond logboat	straight	U-shaped	concave
	Hopkinton logboat (Jo-Sylvia Lake, MA)	straight	squared U-shaped	squared
Allen R. Saltus (MS & LA)	"Keel" Pascagoula River canoe, MS			
	Carolina Bluff Canoe (Red River, LA)	straight	squared U-shaped	squared
Mark Joseph Hartmann, 1996	DeLeon I (Florida)			
	DeLeon II (Florida)			
	Lake Galilee 4 (Florida)			

Publication (Author, Year)	Canoe Name/#	Bottom Contour	Bottom Shape	Sides
	Florahome 4 (FL)			
	Stricklin 18 (FL)			
	Lakeland (IMC)			
	Swisher (Putnam County, FL)			
	Cowpen Lake			
	Magnolia Lake			
	Dog Island		C-shaped	concave
	Tucker Lake 2			
	Zellwood I			
	Hampton Lake I			
	Loch Low Lake Canoe (FL)			
	Wildent Lake			
	Little Shady Lake			
	Lake Kissimmee			
	Pine Lakes			
	Little Orange Lake 3			
	Red River (LA)	straight	U-shaped	concave
	Silver River (FL)	straight	U-shaped	concave
	Tucker Lake 4			
	Micanopy 2			
	Long Pond			
	Suwannee 3			
	Goose Lake 3			
	Lake Griffin 3			
	Grandin			
	Micanopy 1			
	Little Orange Lake 2	straight	U-shaped	concave
	Stricklin 14 (FL)			
	Fluker's Bluff (LA)	straight		
	Grassy Lake (FL)	straight	U-shaped	concave
	Keuka Lake (FL)			
	Hartman Lake (FL)			
	Stricklin 10 (FL)			
	Georges Lake 2 (FL)			
	Tombigbee I (AL)	straight	U-shaped	concave
	Goose Lake 2 (FL)			
	Tucker Lake I (FL)			
	Hull Lake I (FL)			
	Goose Lake 5 (FL)			
	Suwannee River 2 (FL)			
	Crooked Lake 3 (FL)			
	Hancock Lake (FL)			
	Lake Salvador 2 (LA) 16SC49	straight	C-shaped	concave
	Stricklin 4 (FL)			
	Texas Memorial Museum (TX)	straight	U-shaped	concave
	High Springs Canoe (FL)			
	Econonfina Creek Canoe (FL)			
	Hampton Lake I Canoe			
	Lake Washington Canoe (FL)			
	Fort Lauderdale Canoe (FL)			

Publication (Author, Year)	Canoe Name/#	Bottom Contour	Bottom Shape	Sides
	Lake Inverness Canoe (FL)			
	Brooklyn Lake Canoe (FL)			
	Seminole Lake Canoe 2 (FL)			
	Dade County Canoe (FL)			
	Etheridge Canoe (FL)			
	Pensacola Canoe (FL)			
	Carrabelle/Dog Island Canoe (FL)			
	"Hatian Canoe" Gasden Co., FL			
	Lake Wimico Canoe (FL)			
	Silver Lake Canoe (FL)			
	Nautta Rise Canoe (FL)			
	Crows Bluff Canoe (FL)			
	Lee County Canoe (FL)			
	Waccasassa River Canoe (FL)		V-shaped	flared
	Delancy Canoe (FL)			
	Jupiter Island Canoe (FL)			
	Grassy Key Canoe (FL)			
	Lake Apopka 1 (FL)			
	Zellwood Frags 2			
	Zellwood Frag 3			
	Lake Preston Canoe (FL)	slight uplift	U-shaped	concave
	St. Petersburg Canoe (FL)	straight		
	Crooked Lake Canoe 1 (FL)			
	Florida Rock Canoe (FL)			
	Adams Ranch Canoe (FL)			
	Escambia Bay Canoe (FL)			
	Hillary Peat Canoe (FL)			
	Suwannee River Canoe Bottm&end frag			
	Daytona Beach/Orange City Canoe (FL)			
	Albany Canoe (FL)			
	Cumberland Canoe (FL)		C-shaped	concave
	Pridgen Canoe (Bladen Co. NC)			
	Battery Island Canoe (NC) 0079CFR			
	Waccamaw Canoe #1 (NC)			
	Tyson Canoe #1 (NC-Cape Fear Mus)			
	Manteo Marine Resources Center Canoe			
	Goodwind Canoe (Carolina Beach Inlet, NC)			
Hartmann plus my own research	Cottle Half Moon (Onslow Co. Canoe NC)	straight	V-shaped	flared
	Valenti Canoe (NC) Lumber River 0001LUR			
	Lake Phelps Canoe #1 0001PHL			
	Lake Phelps 30ft 0002PHL			
	Lake Phelps; Butler Canoe 0003PHL			
	Lake Phelps; Pond Canoe 0004 PHL	uplift		
	Lake Phelps #5			
	Lake Phelps #6			
	Lake Phelps #7			
	Lake Phelps #8			
	Lake Phelps #9			
	Lake Phelps #10			
	Lake Phelps #11			

Publication (Author, Year)	Canoe Name/#	Bottom Contour	Bottom Shape	Sides
	Lake Phelps #12			
	Lake Phelps #13			
	Lake Phelps #14			
	Lake Phelps #15			
	Lake Phelps #16			
	Lake Phelps #17			
	Lake Phelps #18			
	Lake Phelps #19			
	Lake Phelps #20			
	Lake Phelps #21			
	Lake Phelps #22			
	Swartz's Dog Pen Canoe Lake Phelps 0025PHL			
The Mariner's Museum Research	BF26 Haida Nation, Queen Charlotte Is.			
	BU51 Powhatan Creek, VA	straight	U-shaped	concave
	BU 37 Lake Michigan	slight uplift		
	BU 16 Lake Champlain, NY-VT	straight	squared U-shaped	squared
	BU 6 Cayuga Lake, NY(log) used in CT	straight	U-shaped	concave
	BU 14 Dismal Swamp;used on Lake Drummond	straight	U-shaped	concave
	BF 24 La Conner, WA	slight uplift	U-shaped	squared
	BU 13 Pearl River, LA	straight	U-shaped	concave
	#125 Blackwater, VA (disintigrated, missing)			
	BU 8 Pith-lo FL Everglades	straight	U-shaped	concave
North Carolina UAB records	Webber Canoe, Pamlico River 0030PMR	uplift	U-shaped	rounded
	Elwell's Ferry Canoe NW Cape Fear River	straight	U-shaped	concave
	Futch Creek Canoe 0001MDS		U-shaped	concave
	Waccamaw Canoe #3 0003WAL		U-shaped	concave
	Coinjock Canoe 0001COS			
	Batson Canoe Topsail Sound 0001TPS	slight uplift	U-shaped	concave
	Carter Canoe, North Landing River 0001NLR			
	Lower Little River Canoe 0071CFR			
	Ruffin Canoe, Tar River, Edgecombe 0016TRR	straight		
	#1-1905 White Lake 0001WHL			
	#2-1906 Singletary lake 0002WHL			
	#3-1907 Singletary lake 0003WHL			
	#4-1908 White Lake 0004WHL			
	Pridgen Canoe fragment White Lake 0006WHL			
	Fayetteville Road canoe white Lake 0007WHL			
	Carolyn Tanner Canoe White Lake 0008WHL			
	Mary Shaw Canoe White Lake 0009WHL			
	Big Jim Canoe White Lake 0010WHL			
	Linton Canoe; Lake Waccamaw 0002WAL			
	Jasper Davis Canoe;Tar River RckyMtMillsDam			
	Shrimp Net Canoe, 0080CFR			
	Tyson Canoe #2, Gray's Creek 0069CFR			
	Black Lake Canoe #1; 0001BKL	straight		
	Black Lake Canoe #2; 0002BKL	slight uplift		
	Black Lake Canoe #3; 0003BKL			
	Jones Lake Canoe #1			
	Andrew Lanier Canoe, Tar River		U-shaped	rounded
	Rocky Mount Canoe #1; Tar River			

Publication (Author, Year)	Canoe Name/#	Bottom Contour	Bottom Shape	Sides
	Rocky Mount Canoe #2; Tar River			
	Rocky Mount Canoe #3; Tar River			
	Strickland Canoe; Lake Waccamaw			rounded
	Lambeth Canoe; Tar River			
Georgia Research Trip	Savannah History Museum #1	straight	U-shaped	concave
	Savannah History Museum #2	straight	U-shaped	concave
	Massie School Logboat	straight	U-shaped	concave
	Cumberland Island NS Logboat #1	straight	squared U-shaped	squared
	Thronateeska Heritage Museum Logboat #1	straight	squared U-shaped	squared
	Thronateeska Heritage Museum Logboat #2	straight	U-shaped	concave
	Timucuan Preserve Logboat (FL)			
	Altamaha River Logboat (Brockington&Assoc)	slight uplift	V-shaped	flare
	Personal Chine-Girder logboat (B&A)			
	Funk Heritage Center Logboat	straight	U-shaped	squared
	Oconee Heritage Center Logboat; SC	straight	squared U-shaped	squared
Robin Moore, 2005, pers comm	Canoe in Gator Enclosure (St. Augustine, FL)			
South Carolina Trip Research	Old Santee Canal Park Logboat	straight	C-shaped	concave
	Charleston Mus. Logboat #1	straight	C-shaped	concave
	Charleston Mus. Plantation Barge "Bessie"	slight uplift	C-shaped	concave
	38BU103 Beaufort R. + Chowan Crk. Logboat			
	38BU57 Hemmings/Boyer logboat			
	38CH57/38CN171 Dunlap logboat			
	38HA144 Chimlee Lake Logboat			
	38SU22 Cut Dam Canoe			
	38GE90 T.B. Canoe site			
	38GE82 "Roots" Logboat(SC State Mus)	straight	squared U-shaped	squared
	38DR36 Kizer/Judy logboat			
	38CN84 Ferguson logboat			
	38BK345 Bob's logboat			
	38BK164 East Branch Cooper River			
	38CN83/38CN38 Chessey Creek Logboat			
	38CN19 Strickland Canoe			
	Ft. Jackson Logboat			
	Kevin Rooney's Canoe hobby lic. 1288			
	Lowe Canoe #1			
	Lowe Canoe #2			
	Lowe Canoe #3			
	Georgetown Canoe (Tom Davis)			
	Drew Ruddy Canoe			
	Dan Ellis Canoe			
	Charles Towne Landing Logboat #2	straight		
	Wilford Logboat #1			
	Wilford Logboat #2			
	Wilford Logboat #3			
	Hilton Head Canoe #1			
	Hilton Head Canoe #2			
	Hilton Head Canoe #3			
	Parris Island Logboat/Cooler Canoe			
	38SU8 Logboat site			
	Horry County Mus. #1	straight	C-shaped	concave

Publication (Author, Year)	Canoe Name/#	Bottom Contour	Bottom Shape	Sides
	Horry County Mus. #2	straight		squared
	Horry County Mus. #3	slight uplift		concave
Virginia DHR files	Upper Machodoc Creek logboat (Ken Busby)		squared U-shaped	squared
	South Anna River logboat 1 (Kenneth Lancaster)		squared U-shaped	squared
	South Anna River logboat 2 (Kattie Bowells)		C-shaped	concave
	Blackwater River logboat 1 (Minton and Bell)	straight		
	Blackwater River logboat 2 (Charles Lee Bell)			
	Blackwater River logboat 3(J. Richard Andrews)			
	Blackwater River logboat 4(J. Richard Andrews)		V-shaped	flared
Florida State Site Files	Moon Lake Canoe #2 (Alachua Co. FL)	straight	squared U-shaped	squared
	Watermelon Pond Canoe (Alachua Co, FL)		U-shaped	squared
	Orange Lake Canoe #1	straight	platform	none
	Orange Lake Canoe #2	straight	platform	none
	Town Lake Canoe	straight	U-shaped	squared
	Lake Elizabeth Canoe			
	Levy Lake Canoe	straight	C-shaped	concave
	Morris Canoe			
	Hampton Lake #2			
	Hampton Lake #3			
	Crosby Lake Canoe #1			
	Crosby Lake Canoe #2			
	Griffith Canoe (Bradford Co., FL)	straight	C-shaped	concave
	Otter Creek Canoe #1 (Bay Co., FL)			
	White Western Lake Canoe			
	Pat's Elbow Canoe (Citrus Co., FL)			
	Gatorbone Lake Canoe	straight	U-shaped	concave
	Lake Geneva Canoe #1 (Clay Co., FL)			
	Lake Geneva Canoe #2			
	Lake Geneva Canoe #3			
	Glisson Lake Canoe			
	Hall Lake Canoe #1	straight	C-shaped	concave
	Hall Lake Canoe #2			
	Hall Lake Canoe #3			
	Hall Lake Canoe #4			
	"Gun Dump" Site/Seminole Lake Canoes (3)			
	Brett Canoe			
	Miami Area Canoe (Dade Co., FL)	slight uplift	C-shaped	concave
	Lord Nelson Canoe (Dural Co, FL)	slight uplift	U-shaped	concave
	Arbuckle Creek Canoe #2) (Highlands Co.)	straight	U-shaped	concave
	Arbuckle Creek Canoe #1			
	Central Florida Canoe (Hillsborough Co., FL)			
	Hillsborough County Canoe	slight uplift	C-shaped	concave
	Mr. Daniel's Canoe			
	Bishop Clark Canoe (Jefferson Co., FL)	straight	platform	none
	Wildcat Lake Canoe (Lake Co, FL)	straight	U-shaped	squared
	Lake Louisa Sunken Turpentine Boat			
	Lake Griffin Canoe #1			
	Lake Griffin Canoe #2			
	Getout Creek Canoe			
	Millstone Plantation Canoe #1			

Publication (Author, Year)	Canoe Name/#	Bottom Contour	Bottom Shape	Sides
	Millstone Plantation Canoe #2			
	Isolate Canoe Site (Liberty Co., FL)			
	Pine Island Ctr/Three Canoe Site			
	Manatee Springs Canoe (Levy Co., FL)			
	Key West Canoe (Monroe Co., FL)			
	Big Pine Key Canoe	slight rocker	C-shaped	concave
	Unid. Hull #2	straight	U-shaped	squared
	Ocala National Forest Canoe (Marion Co., FL)	straight	squared U-shaped	squared
	Oklawaha River Canoe #1	straight		
	Oklawaha River Canoe #4			
	Oklawaha River Canoe #5	straight	U-shaped	concave
	Withlacoochee River Canoe #3			
	Lake Bryant Canoe #1	straight	U-shaped	squared
	Lake Apopka Canoe #2 (Orange Co., FL)	straight		
	John's Lake Canoe #1	straight	squared U-shaped	flared
	John's Lake Canoe #2			
	King Lake East Canoe (Paseo Co. FL)			
	Hillsboro Riv. Canoe/Barnhill Canoe(PalmBeach)			
	Lake Osborne Canoe			
	Lake Hollingsworth Canoe (group of 14)			
	Crooked Lake Canoe #4 (Polk Co., FL)			
	Lake Agnus Canoe	straight	platform	none
	Lake Rosalie Canoe Group			
	Florahome Canoe #1 (Putnam Co., FL)			
	Florahome Canoe #2		C-shaped	concave
	Florahome Canoe #3	straight	squared U-shaped	squared
	Little Orange Lake Canoe #1	straight	squared U-shaped	squared
	Lake Galilee Canoe #1			
	Lake Galilee Canoe #2			
	Lake Galilee Canoe #3	straight		
	Georges Lake Canoe #1			
	Brantly Lake Canoe			
	Satsuma Lake Canoe (miniature canoe)	straight	squared U-shaped	squared
	Lake Cambo Canoe			
	Two Mile Pond Canoe			
	Mariner Lake Canoe			
	Ashley Lake Canoe #1	straight		
	Goose Lake Canoe #1	straight	U-shaped	squared
	Goose Lake Canoe #4	straight	U-shaped	concave
	Brite Lake Canoe			
	Oklawaha River Canoe #6			
	Stokes Pond Canoe Group (5)			
	Bear Lake Canoes (3)			
	Withlacoochee River Canoe #2	straight	squared U-shaped	squared
	Seville Canoe			
	Thornhill Lake Canoe			
	Tomoka River Canoe	straight	squared U-shaped	squared

Publication (Author, Year)	Canoe Name/#	Deterioration	Completeness
Brose and Greber, 1982	Ringler	none	whole
Alford, 1992	Doodle	little	whole
	Unnamed		
	Bridgeton hull	total	none
Carter, et al, 1982	Uniacke Lake, Nova Scotia	none	whole
Barnett, 1984	Homochitto River Canoe #2, MS	contaminated with humic acid	whole
	MS Delta Area; OCM		
	Picayune, MS		
Pittman and Lipe, 1972	Black Lake, Elizabethtown, NC	some	partial
Wheeler, et al, 2003	Newnan's Lake:		
	1		partial
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Publication (Author, Year)	Canoe Name/#	Deterioration	Completeness
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	81		
	95		
	DeLeon Springs 2		
	DeLeon Springs 1		
	Lake Galilee 5		
	Harney Flats Canoe (FL)	upper portions eroded	
	Davis Florahome 4		
	Lake Monroe		
	Stricklin 17		
	Lake Louisa 1		
	Lake Louisa 2		
	IMC 1		
	Lakeland		
	Davis Florahome 5		
Wendy Weaver, email	Altamaha, GA canoe	extensive worm borings	not intact
	farmer watering trough	extensive;used as planter and hog watering trough	
Jo Miles-Seeley, 1995	Swan Lake Canoe (Mississippi)		
Noel R. Stowe, 1974	Gulf Coast Canoe #1(Mobile, AL)	some cracking and splitting	port gunwhale missing
	Gulf Coast Canoe #2 (Van Cleave, MS)	dry rot;cracking;mod. Add.	gunwales lower
	Gulf Coast Canoe #3 (Cedar Creek, MS)	good condition	some stern damage
	Gulf Coast Canoe #4(Pascagoula, MS)	bottom rotted out	has ends but no bottom
Sam McGahey, 1986 (All MS)	Homochitto Canoe #1		
	Georgetown Canoe (Pearl River, MS)		
	Shubuta Canoe (Chickasawhay River, MS)		
	Malone Lake Canoe		
	East Pearl Canoe #1 (Pearl River, MS)	may not be finished?	rough appearance
	Steele Bayou Canoe	severly eroded	may not be finished?
	Linday Canoe (Tombigbee River, MS)		only one end recovered
	Pascagoula River Canoe #1		seat at one end
	Greenwood Canoe (Tallahatchi River, MS)		
Anne Marie Plane, 1991 (MA)	Weymouth Great Pond logboat	some discoloration	whole
	Hopkinton logboat (Jo-Sylvia Lake, MA)		upper stern is missing
Allen R. Saltus (MS & LA)	"Keel" Pascagoula River canoe, MS		
	Carolina Bluff Canoe (Red River, LA)		
Mark Joseph Hartmann, 1996	DeLeon I (Florida)	no lignin left; LIC	ends,gunwales missing
	DeLeon II (Florida)	LIC (sugar allowed to harden)	
	Lake Galilee 4 (Florida)		

Publication (Author, Year)	Canoe Name/#	Deterioration	Completeness
	Florahome 4 (FL)		
	Stricklin 18 (FL)		
	Lakeland (IMC)	LIC	
	Swisher (Putnam County, FL)		
	Cowpen Lake		
	Magnolia Lake		
	Dog Island		
	Tucker Lake 2		
	Zellwood I		
	Hampton Lake I		
	Loch Low Lake Canoe (FL)	gunwales eroded	ends and bottom intact
	Wildent Lake		
	Little Shady Lake		
	Lake Kissimmee		
	Pine Lakes		
	Little Orange Lake 3		
	Red River (LA)		
	Silver River (FL)		
	Tucker Lake 4		
	Micanopy 2		
	Long Pond		
	Suwannee 3		
	Goose Lake 3		
	Lake Griffin 3		
	Grandin		
	Micanopy 1		
	Little Orange Lake 2		
	Stricklin 14 (FL)		
	Fluker's Bluff (LA)		
	Grassy Lake (FL)		
	Keuka Lake (FL)		
	Hartman Lake (FL)		
	Stricklin 10 (FL)	LIC	
	Georges Lake 2 (FL)		
	Tombigbee I (AL)		
	Goose Lake 2 (FL)		
	Tucker Lake I (FL)		
	Hull Lake I (FL)		
	Goose Lake 5 (FL)		
	Suwannee River 2 (FL)		
	Crooked Lake 3 (FL)		
	Hancock Lake (FL)		
	Lake Salvador 2 (LA) 16SC49		
	Stricklin 4 (FL)		
	Texas Memorial Museum (TX)		
	High Springs Canoe (FL)		intact; parts missing
	Econonfina Creek Canoe (FL)		
	Hampton Lake I Canoe		part of end missing
	Lake Washington Canoe (FL)	poor condition	whole
	Fort Lauderdale Canoe (FL)	fair condition	whole

Publication (Author, Year)	Canoe Name/#	Deterioration	Completeness
	Lake Inverness Canoe (FL)	very good condition	whole
	Brooklyn Lake Canoe (FL)	very poor condition	ends missing
	Seminole Lake Canoe 2 (FL)		
	Dade County Canoe (FL)		end frag remains
	Etheridge Canoe (FL)		
	Pensacola Canoe (FL)	fair	forward half remains
	Carrabelle/Dog Island Canoe (FL)	gunwales LIC	
	"Hatian Canoe" Gasden Co., FL	good condition	gunwales and bow deteric
	Lake Wimico Canoe (FL)	good condition	whole
	Silver Lake Canoe (FL)		
	Nautta Rise Canoe (FL)	stable, untreated	forward half remains
	Crows Bluff Canoe (FL)	shape remains, fair	80% remains
	Lee County Canoe (FL)	poor condition	whole
	Waccasassa River Canoe (FL)		both ends remain
	Delancy Canoe (FL)	ends intact;sides eroded	whole
	Jupiter Island Canoe (FL)	excellent condition	whole
	Grassy Key Canoe (FL)	very poor condition	bow remains
	Lake Apopka 1 (FL)	very poor condition	small frag remains
	Zellwood Frags 2	not excavated	frag
	Zellwood Frag 3	not excavated	frag
	Lake Preston Canoe (FL)	broken in half in recovery	whole
	St. Petersburg Canoe (FL)	fair; eroded	whole
	Crooked Lake Canoe 1 (FL)	broken in four in recovery	sections
	Florida Rock Canoe (FL)	gunwales eroded	nearly intact
	Adams Ranch Canoe (FL)	moderately eroded	ends intact
	Escambia Bay Canoe (FL)		
	Hillary Peat Canoe (FL)		
	Suwannee River Canoe Bottm&end frag	badly deteriorated	bottom and end remain
	Daytona Beach/Orange City Canoe (FL)	eroded	whole
	Albany Canoe (FL)		whole
	Cumberland Canoe (FL)		whole
	Pridgen Canoe (Bladen Co. NC)		end frag only
	Battery Island Canoe (NC) 0079CFR	only frag	15% remains
	Waccamaw Canoe #1 (NC)		
	Tyson Canoe #1 (NC-Cape Fear Mus)		40% remains
	Manteo Marine Resources Center Canoe	trough-like frag	25% remains;one end
	Goodwind Canoe (Carolina Beach Inlet, NC)	end only	end intact
Hartmann plus my own research	Cottle Half Moon (Onslow Co. Canoe NC)	some flaking	whole
	Valenti Canoe (NC) Lumber River 0001LUR		80% intact
	Lake Phelps Canoe #1 0001PHL		10/20% intact
	Lake Phelps 30ft 0002PHL	broken in 3 during recovery	60% intact
	Lake Phelps; Butler Canoe 0003PHL		whole
	Lake Phelps; Pond Canoe 0004 PHL		whole
	Lake Phelps #5		
	Lake Phelps #6		incomplete
	Lake Phelps #7	partly out of water	incomplete
	Lake Phelps #8		
	Lake Phelps #9		
	Lake Phelps #10		beak-like end
	Lake Phelps #11		one intact end

Publication (Author, Year)	Canoe Name/#	Deterioration	Completeness
	Lake Phelps #12		
	Lake Phelps #13		
	Lake Phelps #14		
	Lake Phelps #15		
	Lake Phelps #16		
	Lake Phelps #17		
	Lake Phelps #18		
	Lake Phelps #19		
	Lake Phelps #20		
	Lake Phelps #21		
	Lake Phelps #22		
	Swartz's Dog Pen Canoe Lake Phelps 0025PHL		85% intact
The Mariner's Museum Research	BF26 Haida Nation, Queen Charlotte Is.	not exhibited	
	BU51 Powhatan Creek, VA	eroded gunwales	3 sections on exhibit
	BU 37 Lake Michigan		
	BU 16 Lake Champlain, NY-VT		whole
	BU 6 Cayuga Lake, NY(log) used in CT	not exhibited	
	BU 14 Dismal Swamp;used on Lake Drummond		whole
	BF 24 La Conner, WA		whole
	BU 13 Pearl River, LA		whole
	#125 Blackwater, VA (disintigrated, missing)		
	BU 8 Pith-lo FL Everglades	evidence of repairs	whole
North Carolina UAB records	Webber Canoe, Pamlico River 0030PMR		40% intact
	Elwell's Ferry Canoe NW Cape Fear River		75% intact
	Futch Creek Canoe 0001MDS		20% intact
	Waccamaw Canoe #3 0003WAL		95% intact
	Coinjock Canoe 0001COS		100% intact
	Batson Canoe Topsail Sound 0001TPS	transom missing	75%intact
	Carter Canoe, North Landing River 0001NLR	possibly unfinished	50% intact
	Lower Little River Canoe 0071CFR	crudely made	
	Ruffin Canoe, Tar River, Edgecombe 0016TRR		60% intact
	#1-1905 White Lake 0001WHL		end fragment
	#2-1906 Singletary lake 0002WHL		end fragment
	#3-1907 Singletary lake 0003WHL		end fragment
	#4-1908 White Lake 0004WHL		end fragment
	Pridgen Canoe fragment White Lake 0006WHL		end fragment
	Fayetteville Road canoe white Lake 0007WHL		
	Carolyn Tanner Canoe White Lake 0008WHL		one end intact
	Mary Shaw Canoe White Lake 0009WHL		
	Big Jim Canoe White Lake 0010WHL	broken during investigation	70% intact
	Linton Canoe; Lake Waccamaw 0002WAL		destroyed
	Jasper Davis Canoe;Tar River RckyMtMillsDam		
	Shrimp Net Canoe, 0080CFR	extreme end only	5% intact
	Tyson Canoe #2, Gray's Creek 0069CFR	one end intact;remaining bottom	
	Black Lake Canoe #1; 0001BKL		75% intact
	Black Lake Canoe #2; 0002BKL		35% intact
	Black Lake Canoe #3; 0003BKL		
	Jones Lake Canoe #1	bow section only;spoon shape	
	Andrew Lanier Canoe, Tar River		80% complete
	Rocky Mount Canoe #1; Tar River	hull split down centerline	50% complete

Publication (Author, Year)	Canoe Name/#	Deterioration	Completeness
	Rocky Mount Canoe #2; Tar River	hull split down centerline	20% complete
	Rocky Mount Canoe #3; Tar River	hull split down centerline	20% complete
	Strickland Canoe; Lake Waccamaw	upper sides and ends missing	60% complete
	Lambeth Canoe; Tar River		80% complete
Georgia Research Trip	Savannah History Museum #1		100% complete
	Savannah History Museum #2	wood rot; chipped paint	100% complete
	Massie School Logboat	one end missing but repaired	90% complete
	Cumberland Island NS Logboat #1	7 large frags and 3 boxes	fragmentary
	Thronateeska Heritage Museum Logboat #1	gunwales and end missing	80% complete
	Thronateeska Heritage Museum Logboat #2	wood rot	100% complete
	Timucuan Preserve Logboat (FL)		
	Altamaha River Logboat (Brockington&Assoc)	worm holes and casings;eros	70%; eroded
	Personal Chine-Girder logboat (B&A)		
	Funk Heritage Center Logboat	cracking	100% complete
	Oconee Heritage Center Logboat; SC	missing one end	90% complete
Robin Moore, 2005, pers comm	Canoe in Gator Enclosure (St. Augustine, FL)		
South Carolina Trip Research	Old Santee Canal Park Logboat		100%
	Charleston Mus. Logboat #1		
	Charleston Mus. Plantation Barge "Bessie"	whole	100%
	38BU103 Beaufort R. + Chowan Crk. Logboat	sides and bow missing	
	38BU57 Hemmings/Boyer logboat		could not be relocated du
	38CH57/38CN171 Dunlap logboat		
	38HA144 Chimlee Lake Logboat		
	38SU22 Cut Dam Canoe		
	38GE90 T.B. Canoe site		
	38GE82 "Roots" Logboat(SC State Mus)	still attached to roots of tree; never cut from canoe or fin	
	38DR36 Kizer/Judy logboat		
	38CN84 Ferguson logboat		
	38BK345 Bob's logboat		
	38BK164 East Branch Cooper River		
	38CN83/38CN38 Chessey Creek Logboat		
	38CN19 Strickland Canoe		
	Ft. Jackson Logboat		
	Kevin Rooney's Canoe hobby lic. 1288		
	Lowe Canoe #1		
	Lowe Canoe #2		
	Lowe Canoe #3		
	Georgetown Canoe (Tom Davis)		
	Drew Ruddy Canoe		
	Dan Ellis Canoe		
	Charles Towne Landing Logboat #2		
	Wilford Logboat #1		
	Wilford Logboat #2		
	Wilford Logboat #3		
	Hilton Head Canoe #1		
	Hilton Head Canoe #2		
	Hilton Head Canoe #3		
	Parris Island Logboat/Cooler Canoe		
	38SU8 Logboat site		
	Horry County Mus. #1		

Publication (Author, Year)	Canoe Name/#	Deterioration	Completeness
	Horry County Mus. #2	eroded; no bottom	
	Horry County Mus. #3		
Virginia DHR files	Upper Machodoc Creek logboat (Ken Busby)	eroded	
	South Anna River logboat 1 (Kenneth Lancaster)		95%
	South Anna River logboat 2 (Kattie Bowells)	eroded	90%
	Blackwater River logboat 1 (Minton and Bell)		
	Blackwater River logboat 2 (Charles Lee Bell)		
	Blackwater River logboat 3(J. Richard Andrews)		
	Blackwater River logboat 4(J. Richard Andrews)	eroded	
Florida State Site Files	Moon Lake Canoe #2 (Alachua Co. FL)	eroded	
	Watermelon Pond Canoe (Alachua Co, FL)	whole	
	Orange Lake Canoe #1	eroded	pointed bow,square stem
	Orange Lake Canoe #2	eroded	
	Town Lake Canoe	whole	pointed bow,square stem
	Lake Elizabeth Canoe		
	Levy Lake Canoe	whole	pointed bow,square stem
	Morris Canoe		
	Hampton Lake #2		
	Hampton Lake #3		
	Crosby Lake Canoe #1		
	Crosby Lake Canoe #2		
	Griffith Canoe (Bradford Co., FL)		
	Otter Creek Canoe #1 (Bay Co., FL)		
	White Western Lake Canoe		
	Pat's Elbow Canoe (Citrus Co., FL)		
	Gatorbone Lake Canoe		
	Lake Geneva Canoe #1 (Clay Co., FL)		
	Lake Geneva Canoe #2		
	Lake Geneva Canoe #3		
	Glisson Lake Canoe		
	Hall Lake Canoe #1		
	Hall Lake Canoe #2		
	Hall Lake Canoe #3		
	Hall Lake Canoe #4		
	"Gun Dump" Site/Seminole Lake Canoes (3)		
	Brett Canoe		
	Miami Area Canoe (Dade Co., FL)		
	Lord Nelson Canoe (Dural Co, FL)		
	Arbuckle Creek Canoe #2) (Highlands Co.)		
	Arbuckle Creek Canoe #1		
	Central Florida Canoe (Hillsborough Co., FL)		
	Hillsborough County Canoe		
	Mr. Daniel's Canoe		
	Bishop Clark Canoe (Jefferson Co., FL)		
	Wildcat Lake Canoe (Lake Co, FL)		
	Lake Louisa Sunken Turpentine Boat		
	Lake Griffin Canoe #1		
	Lake Griffin Canoe #2		
	Getout Creek Canoe		
	Millstone Plantation Canoe #1		

Publication (Author, Year)	Canoe Name/#	Deterioration	Completeness
	Millstone Plantation Canoe #2		
	Isolate Canoe Site (Liberty Co., FL)		
	Pine Island Ctr/Three Canoe Site		
	Manatee Springs Canoe (Levy Co., FL)		
	Key West Canoe (Monroe Co., FL)		
	Big Pine Key Canoe		
	Unid. Hull #2		
	Ocala National Forest Canoe (Marion Co., FL)		
	Oklawaha River Canoe #1		
	Oklawaha River Canoe #4		
	Oklawaha River Canoe #5		
	Withlacoochee River Canoe #3		
	Lake Bryant Canoe #1		
	Lake Apopka Canoe #2 (Orange Co., FL)		
	John's Lake Canoe #1		
	John's Lake Canoe #2		
	King Lake East Canoe (Paseo Co. FL)		
	Hillsboro Riv. Canoe/Barnhill Canoe(PalmBeach)		
	Lake Osborne Canoe		
	Lake Hollingsworth Canoe (group of 14)		
	Crooked Lake Canoe #4 (Polk Co., FL)		
	Lake Agnus Canoe		
	Lake Rosalie Canoe Group		
	Florahome Canoe #1 (Putnam Co., FL)		
	Florahome Canoe #2		
	Florahome Canoe #3		
	Little Orange Lake Canoe #1		
	Lake Galilee Canoe #1		
	Lake Galilee Canoe #2		
	Lake Galilee Canoe #3		
	Georges Lake Canoe #1		
	Brantly Lake Canoe		
	Satsuma Lake Canoe (miniature canoe)		
	Lake Cambo Canoe		
	Two Mile Pond Canoe		
	Mariner Lake Canoe		
	Ashley Lake Canoe #1		
	Goose Lake Canoe #1		
	Goose Lake Canoe #4		
	Brite Lake Canoe		
	Oklawaha River Canoe #6		
	Stokes Pond Canoe Group (5)		
	Bear Lake Canoes (3)		
	Withlacoochee River Canoe #2		
	Seville Canoe		
	Thornhill Lake Canoe		
	Tomoka River Canoe		

Publication (Author, Year)	Canoe Name/#	Additional Modifications	Notes
Brose and Greber, 1982	Ringler		
Alford, 1992	Doodle		
	Unnamed		
	Bridgeton hull		
Carter, et al, 1982	Uniacke Lake, Nova Scotia		
Barnett, 1984	Homochitto River Canoe #2, MS	yes	
	MS Delta Area; OCM		
	Picayune, MS		
Pittman and Lipe, 1972	Black Lake, Elizabethtown, NC		
Wheeler, et al, 2003	Newnan's Lake:		
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Publication (Author, Year)	Canoe Name/#	Additional Modifications	Notes
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	95		
	DeLeon Springs 2		
	DeLeon Springs 1		
	Lake Galilee 5		
	Harney Flats Canoe (FL)		
	Davis Florahome 4		
	Lake Monroe		
	Stricklin 17		
	Lake Louisa 1		
	Lake Louisa 2		
	IMC 1		
	Lakeland		
	Davis Florahome 5		
Wendy Weaver, email	Altamaha, GA canoe		
	farmer watering trough		
Jo Miles-Seeley, 1995	Swan Lake Canoe (Mississippi)		
Noel R. Stowe, 1974	Gulf Coast Canoe #1(Mobile, AL)		
	Gulf Coast Canoe #2 (Van Cleave, MS)		
	Gulf Coast Canoe #3 (Cedar Creek, MS)		
	Gulf Coast Canoe #4(Pascagoula, MS)		
Sam McGahey, 1986 (All MS)	Homochitto Canoe #1	hole for rope or pole?	
	Georgetown Canoe (Pearl River, MS)	exceptionally thin	
	Shubuta Canoe (Chickasawhay River, MS)		
	Malone Lake Canoe	grooves for stabilizing	
	East Pearl Canoe #1 (Pearl River, MS)	seats at each end	
	Steele Bayou Canoe		
	Linday Canoe (Tombigbee River, MS)		
	Pascagoula River Canoe #1		
	Greenwood Canoe (Tallahatchi River, MS)		
Anne Marie Plane, 1991 (MA)	Weymouth Great Pond logboat	possible rib?	
	Hopkinton logboat (Jo-Sylvia Lake, MA)		
Allen R. Saltus (MS & LA)	"Keel" Pascagoula River canoe, MS	3 length-wise boards pegged together	
	Carolina Bluff Canoe (Red River, LA)		
Mark Joseph Hartmann, 1996	DeLeon I (Florida)	foot mount/brace	
	DeLeon II (Florida)		
	Lake Galilee 4 (Florida)		

Publication (Author, Year)	Canoe Name/#	Additional Modifications	Notes
	Florahome 4 (FL)		
	Stricklin 18 (FL)		
	Lakeland (IMC)		
	Swisher (Putnam County, FL)		
	Cowpen Lake		
	Magnolia Lake		
	Dog Island		
	Tucker Lake 2		
	Zellwood I		
	Hampton Lake I		
	Loch Low Lake Canoe (FL)	paddle found near canoe?	
	Wildent Lake		
	Little Shady Lake		
	Lake Kissimmee		
	Pine Lakes		
	Little Orange Lake 3		
	Red River (LA)		
	Silver River (FL)		
	Tucker Lake 4		
	Micanopy 2		
	Long Pond		
	Suwannee 3		
	Goose Lake 3		
	Lake Griffin 3		
	Grandin		
	Micanopy 1		
	Little Orange Lake 2		
	Stricklin 14 (FL)		
	Fluker's Bluff (LA)		
	Grassy Lake (FL)		
	Keuka Lake (FL)		
	Hartman Lake (FL)		
	Stricklin 10 (FL)		
	Georges Lake 2 (FL)		
	Tombigbee I (AL)		
	Goose Lake 2 (FL)		
	Tucker Lake I (FL)		
	Hull Lake I (FL)		
	Goose Lake 5 (FL)		
	Suwannee River 2 (FL)		
	Crooked Lake 3 (FL)		
	Hancock Lake (FL)		
	Lake Salvador 2 (LA) 16SC49		
	Stricklin 4 (FL)		
	Texas Memorial Museum (TX)		
	High Springs Canoe (FL)		
	Econonfina Creek Canoe (FL)		
	Hampton Lake I Canoe		
	Lake Washington Canoe (FL)		
	Fort Lauderdale Canoe (FL)		

Publication (Author, Year)	Canoe Name/#	Additional Modifications	Notes
	Lake Inverness Canoe (FL)		
	Brooklyn Lake Canoe (FL)		
	Seminole Lake Canoe 2 (FL)		
	Dade County Canoe (FL)		
	Etheridge Canoe (FL)		
	Pensacola Canoe (FL)		
	Carrabelle/Dog Island Canoe (FL)		
	"Hatian Canoe" Gasden Co., FL		
	Lake Winico Canoe (FL)		
	Silver Lake Canoe (FL)		
	Nautta Rise Canoe (FL)		
	Crows Bluff Canoe (FL)		
	Lee County Canoe (FL)		
	Waccasassa River Canoe (FL)		
	Delancy Canoe (FL)		
	Jupiter Island Canoe (FL)		
	Grassy Key Canoe (FL)		
	Lake Apopka 1 (FL)		
	Zellwood Frags 2		
	Zellwood Frag 3		
	Lake Preston Canoe (FL)		
	St. Petersburg Canoe (FL)	seat in center of logboat	
	Crooked Lake Canoe 1 (FL)		
	Florida Rock Canoe (FL)	foot mount/brace?	
	Adams Ranch Canoe (FL)		
	Escambia Bay Canoe (FL)		
	Hillary Peat Canoe (FL)		
	Suwannee River Canoe Bottm&end frag		
	Daytona Beach/Orange City Canoe (FL)		
	Albany Canoe (FL)		
	Cumberland Canoe (FL)		
	Pridgen Canoe (Bladen Co. NC)		Bladen Co. Historical Society
	Battery Island Canoe (NC) 0079CFR		New Hanover County Mus.
	Waccamaw Canoe #1 (NC)		Lake Waccamaw Depot Museum
	Tyson Canoe #1 (NC-Cape Fear Mus)		found in Gray's Creek 0067CFR
	Manteo Marine Resources Center Canoe		Manteo Marine Resources Center
	Goodwind Canoe (Carolina Beach Inlet, NC)		Tryon Palace
Hartmann plus my own research	Cottle Half Moon (Onslow Co. Canoe NC)		
	Valenti Canoe (NC) Lumber River 0001LUR		Native American Res.Ctr. PembrokeSU
	Lake Phelps Canoe #1 0001PHL		UAU
	Lake Phelps 30ft 0002PHL		NC Mus. Of History; conserved with sucrose
	Lake Phelps; Butler Canoe 0003PHL		treated with sucrose; Pettigrew State Park
	Lake Phelps; Pond Canoe 0004 PHL		treated with sucrose; Pettigrew State Park
	Lake Phelps #5		Pettigrew State Park
	Lake Phelps #6		Pettigrew State Park
	Lake Phelps #7		Pettigrew State Park
	Lake Phelps #8		Pettigrew State Park
	Lake Phelps #9		Pettigrew State Park
	Lake Phelps #10		in situ
	Lake Phelps #11	curved near center-b/c of orig. log shape?	in situ

Publication (Author, Year)	Canoe Name/#	Additional Modifications	Notes
	Lake Phelps #12		in situ
	Lake Phelps #13		in situ
	Lake Phelps #14		in situ
	Lake Phelps #15		in situ
	Lake Phelps #16		in situ
	Lake Phelps #17		in situ
	Lake Phelps #18		in situ
	Lake Phelps #19		in situ
	Lake Phelps #20		in situ
	Lake Phelps #21		in situ
	Lake Phelps #22		in situ
	Swartz's Dog Pen Canoe Lake Phelps 0025PHL	2 holes near end and gunwales	in situ
The Mariner's Museum Research	BF26 Haida Nation, Queen Charlotte Is.		
	BU51 Powhatan Creek, VA		
	BU 37 Lake Michigan		
	BU 16 Lake Champlain, NY-VT	inner rail for seat?	squared off stern; pointed bow
	BU 6 Cayuga Lake, NY(log) used in CT	seat, pole	used in Oyster fishing
	BU 14 Dismal Swamp;used on Lake Drummond		
	BF 24 La Conner, WA	seats	used for racing
	BU 13 Pearl River, LA	groove for seats	
	#125 Blackwater, VA (disintigrated, missing)		exhibited outside
	BU 8 Pith-lo FL Everglades	metal rail along "keel"; seats	painted green
North Carolina UAB records	Webber Canoe, Pamlico River 0030PMR	cedar ribs, gauge pins	two logs, centerboard
	Elwell's Ferry Canoe NW Cape Fear River	gauge pins; raked transom	New Hanover Co. Museum
	Futch Creek Canoe 0001MDS	copper sheet/nails patching	
	Waccamaw Canoe #3 0003WAL		Lake Waccamaw Depot Mus.
	Coinjock Canoe 0001COS		rough hewn; Museum of the Albemarle
	Batson Canoe Topsail Sound 0001TPS	mast step;centerboard slot;gauge holes;thwart	Topsail Island Rocket Museum
	Carter Canoe, North Landing River 0001NLR	gauge holes drilled but not through	Currituck Co. Wildlife Guild
	Lower Little River Canoe 0071CFR		Malcomb Blue Farm, Aberdeen, NC
	Ruffin Canoe, Tar River, Edgecombe 0016TRR		Rocky Mount Children's Museum
	#1-1905 White Lake 0001WHL		Jones Lake State Park
	#2-1906 Singletary lake 0002WHL		Mus. Of Coastal Carolina, Ocean Isle
	#3-1907 Singletary lake 0003WHL		Town of White lake
	#4-1908 White Lake 0004WHL		Mus. Of Coastal Carolina, Ocean Isle
	Pridgen Canoe fragment White Lake 0006WHL		UAU
	Fayetteville Road canoe white Lake 0007WHL		Southport Maritime Museum
	Carolyn Tanner Canoe White Lake 0008WHL		in situ
	Mary Shaw Canoe White Lake 0009WHL		in situ;6ft exposed above lake bottom
	Big Jim Canoe White Lake 0010WHL		in situ
	Linton Canoe; Lake Waccamaw 0002WAL		
	Jasper Davis Canoe;Tar River RckyMtMillsDam		undocumented; reported in situ
	Shrimp Net Canoe, 0080CFR		Federal Pt. Historical Society
	Tyson Canoe #2, Gray's Creek 0069CFR		Steve Rattey, Fayetteville 910-865-1131
	Black Lake Canoe #1; 0001BKL		outer sides unfinished;Gourd Museum
	Black Lake Canoe #2; 0002BKL	3/4"gauge holes; seat 1.4ftX11in	Gourd Mus. Fugauy Varina-Marvin Johnson-priva
	Black Lake Canoe #3; 0003BKL		Gourd Mus. Fugauy Varina-Marvin Johnson-priva
	Jones Lake Canoe #1		Jones Lake State Park
	Andrew Lanier Canoe, Tar River		in situ
	Rocky Mount Canoe #1; Tar River		UAU

Publication (Author, Year)	Canoe Name/#	Additional Modifications	Notes
	Rocky Mount Canoe #2; Tar River		UAU
	Rocky Mount Canoe #3; Tar River		UAU
	Strickland Canoe; Lake Waccamaw		Lake Waccamaw
	Lambeth Canoe; Tar River	carved seat in stern; one gauge hole	in situ
Georgia Research Trip	Savannah History Museum #1	two sets of seat supports	very symmetrical
	Savannah History Museum #2	seats. knees; rail cap; stabilizers	periagua type; double hull
	Massie School Logboat		one end repaired with plaster
	Cumberland Island NS Logboat #1		was in two frags but has deteriorated into many
	Thronateeska Heritage Museum Logboat #1		very thick outer hull?
	Thronateeska Heritage Museum Logboat #2		gunwales eroded; made out of telephone pole?
	Timucuan Preserve Logboat (FL)		
	Altamaha River Logboat (Brockington&Assoc)		sweating salt and epoxy? At Brockington &Assoc.
	Personal Chine-Girder logboat (B&A)		used as a planter? In a "personal" collection
	Funk Heritage Center Logboat		at Funk Heritage Center, GA
	Oconee Heritage Center Logboat, SC		currently in PEG treatment; Dr. Leader saw tool ma
Robin Moore, 2005, pers comm	Canoe in Gator Enclosure (St. Augustine, FL)	rail, frames, seats, oar blocks	in a gator enclosure, personal owner unknown
South Carolina Trip Research	Old Santee Canal Park Logboat	capped ends, middle platform for mast?; stern seat; gauge holes filled in	
	Charleston Mus. Logboat #1	capped ends, reinforced w/ribs; platform for mast?,used to transport workers to rice fields	
	Charleston Mus. Plantation Barge "Bessie"	either two logs attached with planks or one log split and attached;	
	38BU103 Beaufort R. + Chowan Crk. Logboat		
	38BU57 Hemmings/Boyer logboat		3 ribs; had 22 cobblestones in it
	38CH57/38CN171 Dunlap logboat		found in tidal beach on atlantic ocean/edisto beach
	38HA144 Chimlee Lake Logboat	handholds at gunwales	
	38SU22 Cut Dam Canoe		
	38GE90 T.B. Canoe site		
	38GE82 "Roots" Logboat(SC State Mus)		
	38DR36 Kizer/Judy logboat		adze toolmarks and gauge holes filled w/treenails
	38CN84 Ferguson logboat	notches on seat and stem; cut nails	adze marks; excavated and put in pond
	38BK345 Bob's logboat		burn marks
	38BK164 East Branch Cooper River		
	38CN83/38CN38 Chessey Creek Logboat		adze and axe marks; conservation info in files
	38CN19 Strickland Canoe		
	Ft. Jackson Logboat		gauge holes filled with treenails
	Kevin Rooney's Canoe hobby lic. 1288		
	Lowe Canoe #1		
	Lowe Canoe #2		
	Lowe Canoe #3		
	Georgetown Canoe (Tom Davis)		
	Drew Ruddy Canoe		
	Dan Ellis Canoe		
	Charles Towne Landing Logboat #2	capped ends;2 seats;outboard motor brackets	gauge holes
	Wilford Logboat #1		
	Wilford Logboat #2		
	Wilford Logboat #3		
	Hilton Head Canoe #1		
	Hilton Head Canoe #2		
	Hilton Head Canoe #3		
	Parris Island Logboat/Cooler Canoe		
	38SU8 Logboat site		
	Horry County Mus. #1	gunwale rail attached with nails;metal rod stabilizer	

Publication (Author, Year)	Canoe Name/#	Additional Modifications	Notes
	Horry County Mus. #2		
	Horry County Mus. #3	live box:seats, iron rod stabilizer: initials PDA	
Virginia DHR files	Upper Machodoc Creek logboat (Ken Busby)		adze marks
	South Anna River logboat 1 (Kenneth Lancaster)	seat	adze marks and iron nail
	South Anna River logboat 2 (Kattie Bowells)	stern seat; gauge holes	attempted conservation with antifreeze and slow dry
	Blackwater River logboat 1 (Minton and Bell)		
	Blackwater River logboat 2 (Charles Lee Bell)		
	Blackwater River logboat 3(J. Richard Andrews)		
	Blackwater River logboat 4(J. Richard Andrews)		
Florida State Site Files	Moon Lake Canoe #2 (Alachua Co. FL)	metal tool marks	not removed from lake
	Watermelon Pond Canoe (Alachua Co, FL)	no	no tool marks, charring evident
	Orange Lake Canoe #1	no	metal tool marks; gauge holes; iron nails
	Orange Lake Canoe #2	no	fire hollowed; metal tool marks
	Town Lake Canoe	no	metal tool marks
	Lake Elizabeth Canoe		
	Levy Lake Canoe	yes	shell tool marks? Seat notch on side
	Morris Canoe		
	Hampton Lake #2		
	Hampton Lake #3		
	Crosby Lake Canoe #1		
	Crosby Lake Canoe #2		
	Griffith Canoe (Bradford Co., FL)	no	gauge holes
	Otter Creek Canoe #1 (Bay Co., FL)		
	White Western Lake Canoe		
	Pat's Elbow Canoe (Citrus Co., FL)		
	Gatorbone Lake Canoe		
	Lake Geneva Canoe #1 (Clay Co., FL)		
	Lake Geneva Canoe #2		
	Lake Geneva Canoe #3		
	Glisson Lake Canoe		
	Hall Lake Canoe #1		
	Hall Lake Canoe #2		
	Hall Lake Canoe #3		
	Hall Lake Canoe #4		
	"Gun Dump" Site/Seminole Lake Canoes (3)		
	Brett Canoe		
	Miami Area Canoe (Dade Co., FL)	no	
	Lord Nelson Canoe (Dural Co, FL)	yes	
	Arbuckle Creek Canoe #2) (Highlands Co.)	no	
	Arbuckle Creek Canoe #1		
	Central Florida Canoe (Hillsborough Co., FL)		
	Hillsborough County Canoe	no	guage holes
	Mr. Daniel's Canoe		
	Bishop Clark Canoe (Jefferson Co., FL)	no	
	Wildcat Lake Canoe (Lake Co, FL)	no	charring on inside; platform bow
	Lake Louisa Sunken Turpentine Boat		
	Lake Griffin Canoe #1		metal tool marks
	Lake Griffin Canoe #2		bow platform
	Getout Creek Canoe		stern platform
	Millstone Plantation Canoe #1		Timuca type; burned by caretaker; shovel end

Publication (Author, Year)	Canoe Name/#	Additional Modifications	Notes
	Millstone Plantation Canoe #2		Timuca type; burned by caretaker; shovel end
	Isolate Canoe Site (Liberty Co., FL)		
	Pine Island Ctr/Three Canoe Site		
	Manatee Springs Canoe (Levy Co., FL)		
	Key West Canoe (Monroe Co., FL)	yes	added planks to freeboard
	Big Pine Key Canoe	yes	maststep; tar and nails; roof tack
	Unid. Hull #2	yes	
	Ocala National Forest Canoe (Marion Co., FL)		metal tool marks
	Oklawaha River Canoe #1	no	pointed bow/square stern
	Oklawaha River Canoe #4		
	Oklawaha River Canoe #5		
	Withlacoochee River Canoe #3	yes	holes for outrigger?
	Lake Bryant Canoe #1	no	metal tool marks; gauge holes
	Lake Apopka Canoe #2 (Orange Co., FL)		flattened by plow
	John's Lake Canoe #1	no	raked ends
	John's Lake Canoe #2		
	King Lake East Canoe (Paseo Co. FL)		
	Hillsboro Riv. Canoe/Barnhill Canoe(PalmBeach)		Calusa Indian canoe from war with Spanish?
	Lake Osborne Canoe		
	Lake Hollingsworth Canoe (group of 14)		
	Crooked Lake Canoe #4 (Polk Co., FL)		
	Lake Agnus Canoe	no	
	Lake Rosalie Canoe Group		
	Florahome Canoe #1 (Putnam Co., FL)		
	Florahome Canoe #2		
	Florahome Canoe #3		
	Little Orange Lake Canoe #1	yes	two pieces attached by cleats
	Lake Galilee Canoe #1		
	Lake Galilee Canoe #2		
	Lake Galilee Canoe #3		
	Georges Lake Canoe #1		
	Brantly Lake Canoe		
	Satsuma Lake Canoe (miniature canoe)	no	
	Lake Cambo Canoe		
	Two Mile Pond Canoe		
	Mariner Lake Canoe		
	Ashley Lake Canoe #1		
	Goose Lake Canoe #1		
	Goose Lake Canoe #4		
	Brite Lake Canoe		
	Oklawaha River Canoe #6		
	Stokes Pond Canoe Group (5)		
	Bear Lake Canoes (3)		
	Withlacoochee River Canoe #2	yes	
	Seville Canoe		
	Thornhill Lake Canoe	no	
	Tomoka River Canoe	yes	