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Thank You! Nena Powell Rice, Editor,  
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# Arts and Sciences

VOL. 23, No. 2, December 2019

# Legacy

South Carolina Institute of Archaeology and Anthropology

## New Evidence That an Extraterrestrial Collision 12,800 Years Ago Triggered an Abrupt Climate Change for Earth

By Christopher Moore (*Previously published in The Conversation*)

### What Kicked off the Earth's Rapid Cooling 12,800 Years Ago?

In the space of just a couple of years, average temperatures abruptly dropped, resulting in temperatures as much as 14 degrees Fahrenheit cooler in some regions of the Northern Hemisphere. If a drop like that happened today, it would mean the average temperature of Miami Beach would quickly change to that of current Montreal,

Canada. Layers of ice in Greenland show that this cool period in the Northern Hemisphere lasted about 1,400 years.

This climate event, called the Younger Dryas by scientists, marked the beginning of a decline in ice-age megafauna, such as mammoth and mastodon, eventually leading to extinction of more than 35 genera of

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Figure 1: A collision from space would leave its mark on Earth. (Vadim Sadovski/Shutterstock.com)

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# Director's Notes

**By Steven D. Smith**  
**SCIAA Director**

Chris Moore, and SCIAA retirees Mark Brooks and Al Goodyear got quite a media buzz from their recent publication supporting the hypothesis that the climate event known as the Younger Dryas (12,800 years ago) was the result of an extraterrestrial impact. You can read about it in this issue. The article made its own impact, being downloaded (as of November 4, 2019) 9,000 times, and was ranked 601<sup>st</sup> of all 191,300 articles tracked in all journals, and 63<sup>rd</sup> in 10,610 tracked articles in *Scientific Reports in Nature*! Chris also wrote a more popular summary of this work for The Conversation, and that article made the number two spot of 70 articles published by university faculty.

The need to track down the ownership of some long-curated artifact collections at SCIAA caused me to dig deeper into the origins of SCIAA recently. Working

with the state library and excavating some documents from a newspaper archive website led me to some interesting discoveries. Long before there was a South Carolina Institute of Archaeology and Anthropology, the university got its "first" professional archaeologist in the fall of 1959 (BCE). Dr. William Edwards arrived to become associate professor in the Department of Anthropology and Sociology at USC. Edwards had been at the University of Pittsburgh and had obtained a Ph.D. from Columbia University. He was slated to teach "North American Archaeology" and "The South Carolina Indian" (*Charleston News and Courier*, June 17, 1959). He must have received an enthusiastic welcome because, the State Legislature passed a resolution in 1960, designating the senior archaeologist at the university, as the State Archaeologist.



Figure 1: Mystery artifact from Stark Farm, October 2019. (Photo by James B. Legg)



Since he was the only archaeologist at USC, Edwards assumed the title, but no funding. Incidentally, one year before Edwards arrived, USC Professor H. H. Turney High had formed the South Carolina Archaeological Society. Its first meeting was held at the USC Russell House.

Edwards first received state funding in 1963, when the State Department of Archaeology was established. That was the birth of the Institute, which was formally recognized as the Institute of Archeology and Anthropology in 1966 by the state and became part of the university (The State, July 17, 1968). Edwards resigned in 1968, and that fall, Dr. Robert L. Stephenson became the Director of the Institute, and the rest is archaeology. Fun fact: John D. Combes was Acting Director of the Institute for that summer between Edwards' resignation and arrival of Stephenson. Another fun fact: The Institute was given control of "salvage operations of underwater artifacts of historical value" in 1969 (*Columbia Record*, March 12, 1969). Prior to that, the Department of Archives had control, and they requested that it be transferred to the university and SCIAA. I'm going to assume they meant kindly.

The SCIAA and the ART lost two of its founding fathers this year. This issue has the obituaries for Tony Harper and Roland Young. Both were Charter Members of ART. Roland was a corporate founder, first Chair of ART, chartered November 14, 1991 and founder of the South Carolina Underwater Archaeological Research Council. Both were generous donors and helped build the endowment. Their obituaries appear in this issue. They are sorely missed.

Finally, we got the band back together in October with Jim Legg, Charlie Cobb, Chester DePratter, Brad Lieb and myself, for our fall 2019 Mississippi tour in search of de Soto. It was mostly a medley of our greatest hits, i.e., we did not find much new material. Chester, however, did find one odd artifact, which I depict here (Figure 1). It is an embossed brass object with a gold leaf cross and lead alloy fill.. If anyone has a guess as to its identity, please contact us.

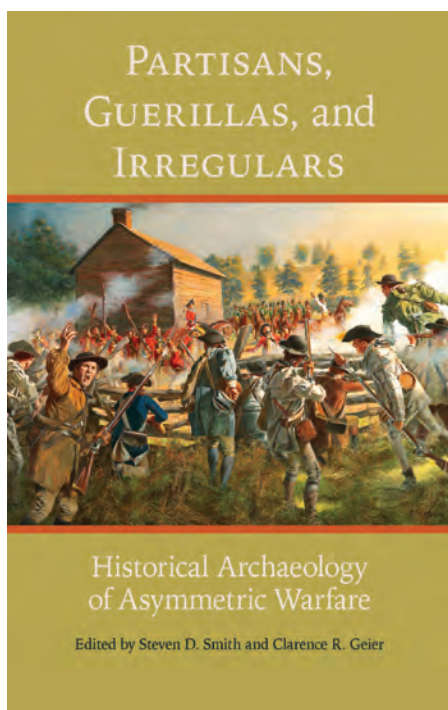


Figure 2: Dr. Chester DePratter metal detecting in Mississippi. (Photo by James B. Legg)



Figure 3: Former SCIAA Director, Charlie Cobb, now at the Florida Natural History Museum at the University of Florida in Gainesville, reviews strategy with Brad Lieb, Chickasaw Nation Archaeologist in Mississippi. (Photo by James B. Legg)

# New for Spring 2019



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## *Partisans, Guerillas, and Irregulars* *Historical Archaeology of Asymmetric Warfare*

**Edited by Steven D. Smith and Clarence R. Geier**

*Essays that explore the growing field of conflict archaeology*

Within the last twenty years, the archaeology of conflict has emerged as a valuable subdiscipline within anthropology, contributing greatly to our knowledge and understanding of human conflict on a global scale. Although archaeologists have clearly demonstrated their utility in the study of large-scale battles and sites of conventional warfare, such as camps and forts, conflicts involving asymmetric, guerilla, or irregular warfare are largely missing from the historical record.

*Partisans, Guerillas, and Irregulars: Historical Archaeology of Asymmetric Warfare* presents recent examples of how historical archaeology can contribute to a better understanding of asymmetric warfare. The volume introduces readers to this growing study and to its historic importance. Contributors illustrate how the wide range of traditional and new methods and techniques of historiography and archaeology can be applied to expose critical actions, sacrifices, and accomplishments of competing groups representing opposing philosophies and ways of life, which are otherwise lost in time.

The case studies offered cover significant events in American and world history, including the French and Indian War, the American Revolution, Indian wars in the Southeast and Southwest, the Civil War, Reconstruction, Prohibition, and World War II. All such examples used here took place at a local or regional level, and several were singular events within a much larger and more complex historic movement. While retained in local memory or tradition, and despite their potential importance, they are poorly, and incompletely addressed in the historic record. Furthermore, these conflicts took place between groups of significantly different cultural and military traditions and capabilities, most taking on a “David vs. Goliath” character, further shaping the definition of asymmetric warfare.

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# A Tribute to Roland C. Young



Roland C. Young (Photo courtesy of the Young Family)

Roland Curtis Young, age 87, of Columbia, SC, a Navy Veteran (a corpsman) died on Monday, August 5, 2019. scotch, and traveling around the world. Roland was a savvy and successful businessman in the complex world of finance and insurance and worked as a State Farm agent in Five Points for 40 years until his retirement in 2000. Even in “retirement,” Roland and Ilsa stayed busy, acting together in local community theatre productions, graciously hosting the best dinner parties ever, singing, performing, active in the Columbia Opera Guild, and supported a plethora of events in their stately Romanesque home in West Columbia—that he designed. Roland played the tuba



Figure 3: Brown's Ferry vessel housed on the third floor of the Rice Museum in Georgetown, SC. (SCIAA photo)

quite well, and the one song he knew on the piano “Johnny Be Good” not as well. Roland was a charming and romantic man who sang unapologetically to his wife and laughed so heartily that he would wipe his eyes. You always knew when Roland was in a room. Roland, a survivor of prostate cancer, was an extremely active advocate for men's health, and organized screening opportunities for scores of men. Through his early detection programs, he helped men connect with their physician while the disease could still be treated. Without doubt his efforts through his organization,

Us, too saved the lives of many men.

Roland enjoyed human history. That passion would lead him to serve as Chairman for the Archaeological Research Trust (ART) Board of Trustees at the SC Institute of Archeology and Anthropology from 1992 until 1996. His non-profit, The South Carolina Underwater Archaeological Research Council, was instrumental in raising the Browns Ferry Vessel. It was and remains the oldest wooden vessel ever recovered in North America. Again, it's impossible to summarize the life of a man who lived one so fully, but without doubt he is in Heaven having a glass of cabernet sauvignon with his brother, John, perhaps patting the head of his dog Rachael, and reminiscing about the good times he had with family and friends. Roland, we will always carry you in our heart—and recite your words of wisdom that “we achieve what we perceive.” Memorials may be made to The Palmetto Opera, PO Box 50462, Columbia, SC, 29250 or to Beth Shalom Synagogue, 5827 N. Trenholm Road, Columbia, SC 29206. Memories and condolences may be shared at [ShivesFuneralHome.com](http://ShivesFuneralHome.com)



Figure 2: Brown's Ferry vessel being lifed from the Black River. (SCIAA Photo)



Figure 2: White Pond has been part of this landscape for 20,000 years or more. (Christopher R. Moore, CC BY-ND)

animals across North America. Although disputed, some research suggests that Younger Dryas environmental changes led to a population decline among the Native Americans known for their distinctive Clovis spear points.

Conventional geologic wisdom blames the Younger Dryas on the failure of glacial ice dams holding back huge lakes in central North America and the sudden, massive blast of freshwater they released into the North Atlantic. This freshwater influx shut down ocean circulation and ended up cooling the climate.

Some geologists, however, subscribe to what is called the impact hypothesis: the idea that a fragmented comet or asteroid collided with the Earth 12,800 years ago and caused this abrupt climate event. Along with disrupting the glacial ice-sheet and shutting down ocean currents, this hypothesis holds that the extraterrestrial impact also triggered an “impact winter” by setting off massive wildfires that blocked sunlight with their smoke.

The evidence is mounting that the cause of the Younger Dryas’ cooling climate came from outer space. My own recent fieldwork at a South Carolina lake that has been around for at least 20,000 years adds to the growing pile of evidence.

### What Would an Earth Impact Leave Behind?

Around the globe, scientists analyzing ocean, lake, terrestrial and ice core records have identified large peaks in particles associated with burning, such as charcoal and soot, right at the time the Younger Dryas kicked in. These would be natural results of the cataclysmic wildfires you would expect to see in the wake of Earth taking an extraterrestrial hit. As much as 10% of global forests and grasslands may

have burned at this time.

Looking for more clues, researchers have pored through the widely distributed Younger Dryas Boundary stratigraphic layer. That’s a distinctive layer of sediments laid down over a given period of time by processes like large floods or movement of sediment by wind or water. If you imagine the surface of the Earth as like a cake, the Younger Dryas Boundary is the layer that was frosted onto its surface 12,800 years ago, subsequently covered by other layers over the millennia.

In the last few years, scientists have found a variety of exotic impact-related materials in the Younger Dryas Boundary layer all over the globe. These include high-temperature iron and silica-rich tiny magnetic sphere, nanodiamonds, soot, high-temperature melt-glass, and elevated concentrations of nickel, osmium, iridium, and platinum.

While many studies have provided evidence supporting the Younger Dryas impact, others have failed to replicate evidence. Some have suggested that materials such as microspherules and nanodiamonds can be formed by other processes and do not require the impact of a comet or asteroid.

### A View of 12,800 Years Ago from White Pond

In the southeastern United States, there are no ice cores to turn to in the quest for ancient climate data. Instead, geologists and archaeologists like me can look to natural lakes. They accumulate sediments over time, preserving layer by layer a record of past climate and environmental conditions.

White Pond is one such natural lake, situated in southern Kershaw County, South Carolina. It covers nearly 26 hectares and is generally shallow, less than two meters even at its deepest portions. Within the lake itself, peat and organic-rich mud and silt deposits upwards of six-meters thick have accumulated at least since the peak of the last ice age more than 20,000 years ago.

So in 2016, my colleagues and I extracted sediment from the bottom of White Pond. Using four-meter-long tubes, we were able to preserve the order and integrity of the many sediment layers that have accumulated over the eons.

Based on preserved seeds and wood charcoal that we radiocarbon dated, my team determined there was about a 10-centimeter thick layer that dated to the Younger Dryas Boundary, from between 12,835 and 12,735 years ago. That is where we concentrated our hunt for evidence of an extraterrestrial impact.

We were particularly looking for platinum. This dense metal is present in the Earth’s crust only at very low concentrations but is common in comets and asteroids. Previous research had identified a large “platinum anomaly”—widespread elevated levels of platinum, consistent with a global extraterrestrial impact source in Younger Dryas layers from Greenland ice cores, as well as across North and South America.

Most recently, the Younger Dryas platinum anomaly has been found in South Africa. This discovery significantly



Figure 3: Collecting sediment cores from White Pond in 2016. (Christopher R. Moore, CC BY-ND)





Figure 4: The long sediment cores are cut in half in order to extract samples for analysis. (Christopher R. Moore, CC BY-ND)

extends the geographic range of the anomaly and adds support to the idea that the Younger Dryas impact was indeed a global event.

Volcanic eruptions are another possible source of platinum, but Younger Dryas Boundary sites with elevated platinum do not have other markers of large-scale volcanism.



Figure 5: Photomicrograph of *Sporormiella*—fungal spores associated with the dung of megaherbivores—from White Pond. (Angelina G. Perrotti, CC BY-ND)

## More Evidence of an Extraterrestrial Impact

In the White Pond samples, we did indeed find high levels of platinum. The sediments also had an unusual ratio of platinum to palladium.

Both of these rare earth elements occur naturally in very small quantities. The fact that there was so much more platinum than palladium suggests that the extra platinum came from an outside source, such as atmospheric fallout in the aftermath of an extraterrestrial impact.

My team also found a large increase in soot, indicative of large-scale regional wildfires. Additionally, the amount of fungal spores that are usually associated with the dung

of large herbivores decreased in this layer compared to previous time periods, suggesting a sudden decline in ice-age megafauna in the region at this time.

While my colleagues and I can show that the platinum and soot anomalies and fungal spore decline all happened at the same time, we cannot prove a cause. The date from White Pond are, however, consistent with the growing body of

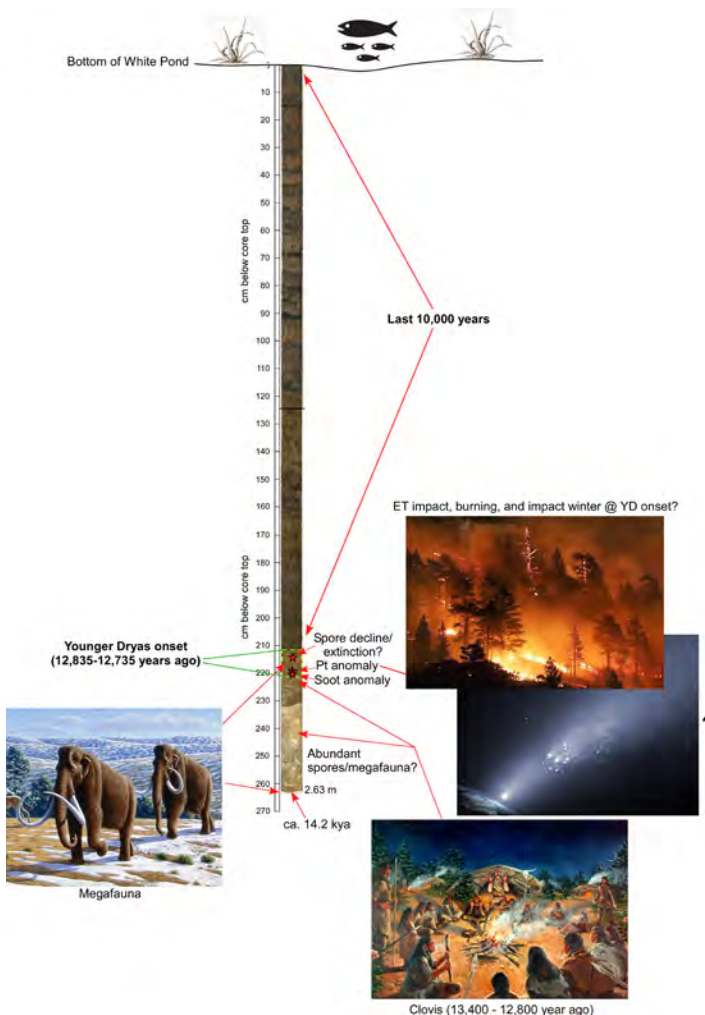


Figure 6: A White Pond sediment core is like a timeline of the stratigraphic layers. What researchers found in each layer provides hints of climate and environment at that time. (Shutterstock.com/Allen West/NASA/Sedwick C (2008) PLoS Biol 6(4): e99/Martin Pate/Southeast Archaeological Center, CC BY-ND)

evidence that a comet or asteroid collision caused continent-scale environmental calamity 12,800 years ago, via vast burning and a brief impact winter. The climate change associated with the Younger Dryas, megafaunal extinctions and temporary declines or shifts in early Clovis hunter-gatherer populations in North America at this time may have their origins in space.

Credit is given to *The Conversation*. Included here is the link to article in *Nature*: <https://www.nature.com/articles/s41598-019-51552-8>, and also a link to SCIAA's website: <http://artsandsciences.sc.edu/sciaa/front-page>. (*This article was edited by Maggie Villager and others.*)

# THE CONVERSATION



# Maritime Research

## Award to Explore for Shipwrecks Offshore Port Royal Sound

By James D. Spirek

A recent award of \$214,500 from the National Oceanic and Atmospheric Administration's (NOAA) Office of Exploration and Research will fund underwater archaeological exploration for shipwrecks offshore the entrance to Port Royal Sound, South Carolina by the Maritime Research Division (MRD) for the next two-years. The project is entitled "Shoals and Shipwrecks: Archeological Explorations off Port Royal Sound" and will feature historical and archaeological research, along with public educational components. The project seeks to address

knowledge gaps and support growth in the Nation's Blue Economy by finding and characterizing shipwrecks and submerged archaeological sites that played a role in America's past ocean-based economy, for example, transport, trade, and warfare. Additionally, results will serve to inform decisions on future seabed activities and potential environmental impacts to these unique and non-renewable archaeological resources.

Extending about seven miles offshore into the Atlantic Ocean, the entrance shoals at Port Royal Sound have proved

to be a "ship trap" since the earliest days of European exploration along the southeastern U.S. coastline. Historical documents suggest about 40 vessels dating from the 16th to 19th centuries met their fate on and around this treacherous shoal complex, including *Le Prince*, a 16th century French corsair recorded to have sunk off Port Royal Sound in 1577, not long after the Spanish founded the Santa Elena settlement on what is now Parris Island (Figure 1). The MRD first launched a search for this shipwreck in the early 2000s relying on funding provided by the Archaeological Research Trust (ART) Fund and supplemented by other private and public funds. Other documented and significant ships wrecked on the shoals include the *HMS Colibri*, a British warship, wrecked in 1813 after pillaging local coastal plantations during the War of 1812, and the bark *Marcia*, a vessel loaded with stone intended by Union naval forces to obstruct near-by Charleston Harbor during the Civil War. Interspersed among these shipwrecks lay numerous other victims of the shoals at the sea entrance to the sound.

The award and matching funds enable the MRD to expand upon earlier efforts to explore for shipwrecks and other structures, sites and objects of archaeological and historical significance in the study area (Figure 2). Documenting archaeological sites and features will support initial preservation efforts and laying the groundwork for more in-depth investigations. The MRD will use advanced marine remote-sensing technology and visual inspections in the search area to detect potential shipwrecks (Figure 3). Historical research of known or potential shipwrecks and the region's maritime history will broaden the understanding of the region's maritime archaeological and historical context.

Another important corollary mission of the team is to engage the public through



Figure 1: Archetypal and heavily armed mid-16th century French galleon, similar to the French corsair *Le Prince* that wrecked off Port Royal Sound in 1577. (Photo courtesy Bibliothèque Nationale de France)



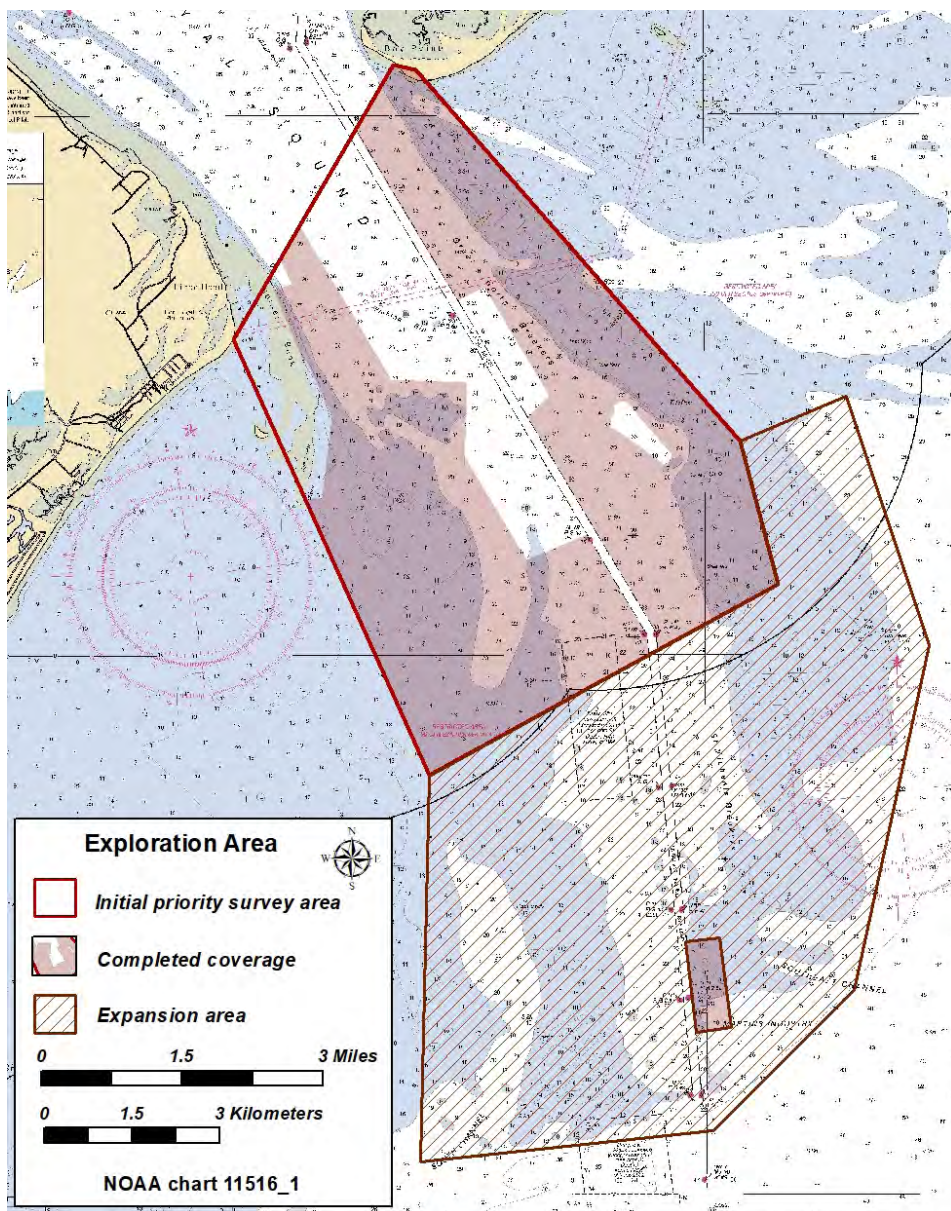


Figure 2: The project exploration area showing previously surveyed and expansion areas. (SCIAA graphic)

a variety of educational and outreach opportunities to promote an awareness and appreciation of the maritime and historical archaeological legacy at Port Royal Sound. These efforts will include newsletter articles, social media content, a website, lectures, and a short film to name a few. Project findings will also provide content for the educational programming, "SUBMERGED: The Underwater Archaeology of South Carolina," that targets middle school students in underserved school districts throughout the Palmetto State. To assist in this part of the project, the MRD has partnered with the Santa Elena History Center, a nonprofit organization based in Beaufort, devoted

to educating the public about the 16th century Spanish colonial presence at Santa Elena and other time periods of Beaufort's and South Carolina history.

The MRD launched an initial round of explorations of the shoals for two-weeks in late October and early November 2019. Wind and waves proved troublesome throughout, forcing daily hide-and-seek games, that is hiding from high seas and seeking relatively calm lee shore waters. Although getting only one truly smooth day further offshore, along with a few marginal hours or days sprinkled here and there, survey operations managed to cover substantial portions of the shoals a bit closer around the entrance to the sound. The MRD will resume survey operations early in 2020 seeking to expand coverage of the furthest offshore shoals during more favorable conditions. After post-processing the magnetic and acoustic data, underwater archaeologists and volunteers will ground truth prioritized targets having potential historical or archaeological significance. Look for further project developments in upcoming newsletters, social media, and other mediums over the next several years.



Figure 3: Jim Spirek and Ryan Bradley deploying cesium magnetometer. (SCIAA image)



# CSS *Pee Dee* Cannons Installed in Florence, South Carolina

By James Spirek and Jonathan Leader

Jettisoned into the Great Pee Dee River by the crew of the CSS *Pee Dee* at the Mars Bluff Naval Yard during the waning days of the Civil War, the three large naval cannons recovered in 2015 are now on display between the U. S. Department of Veterans Affairs building and the Florence National Cemetery in Florence, South Carolina. The restored armament consists of two Brooke double-banded rifles, a VII-inch and a VI.4-inch, and a IX-inch Dahlgren smoothbore (Figure 1). The cannons are arranged along a central sidewalk and mounted on replica 4-truck naval carriages behind brick walls representing the bulwarks of a gunboat. Tompions, decorated with a bronze star, are fitted in each muzzle to prevent debris, as well as moisture from rain, snow, and dew from collecting in the bore. A signboard with text and imagery are installed nearby with details about each cannon. An exhibit at the Florence County Museum complements the outdoor display and provides historical and archaeological information about the cannons and the scuttled gunboat, artifacts recovered from the naval yard waterfront, and the projectiles and associated accoutrements



Figure 2: Loading a Brooke rifle on the flat-bed trailer at the WLCC. (SCIAA photo)

removed from each cannon. The two screw propellers salvaged from the wreck of the gunboat in the 1920s are also on the grounds of the museum.

The cannons were installed in June 2019 under the direction of the authors and assisted by the same partners that recovered the cannons in September 2015. After loading the three cannons onto a flat-bed trailer and following a

two-hour drive from the Warren Lasch Conservation Center (WLCC) in North Charleston to Florence, but not before eating a nice lunch spread provided by Florence County and the VA, we got to work installing the cannons. A large crane hoisted each cannon from the truck trailer onto their respective carriage. Before setting the cannon down, a thin Teflon sheet was inserted at the three points of contact between the cannon and carriage, specifically at each trunnion and lower breech. This was a preventative measure to minimize corrosion between the two iron objects. Shuffling the ordnance weighing from 9,000 to 15,000 lbs. from truck to carriage went smoothly and safely thanks to the coordinated efforts between the crane crew and ground team (Figures 2-4).

The cannons since their recovery in late September 2015, luckily a few days before the 1,000-year deluge struck South Carolina, to early 2019 had undergone treatment to preserve and mitigate the effects of 150-years lying submerged and embedded in the river bottom. The cannons were treated at the WLCC, the same facility conserving the Confederate submarine *H. L. Hunley*, along with their projectiles and associated artifacts. Basically, the process involved removing



Figure 1: IX-inch Dahlgren on display with U.S. Department of Veterans Affairs building in background. (SCIAA photo)





Figure 3: Jim Spirek and Glenn Dutton with Long Bay Salvage, discussing the game plan to mount the cannons on their respective carriages. (SCIAA photo)

chlorides (salts) and other corrosion products, stabilizing the metal, and then coating the cannons for outdoor display. Fortunately, the cannons came from a freshwater environment that minimized absorption of chlorides in the iron, but the conservators were still surprised by the persistence of chlorides throughout the treatment process.

The first phase of the treatment process consisted of removing the cocoon

enshrining each cannon (Figure 5). The cocoon consisted of iron oxides or rust that combined with sand, pebbles, mussel shells, and other detritus that formed a concretion several inches thick in places. The concretion protected the cannons and projectiles from the turbulent riverine environment that included frequent burial and unburial sequences. The muzzle of the VII-in Brooke rifle, which stood upright and closest to the bank, was exposed to air during periods of drought that allowed for more corrosion to occur several feet down the barrel and bore. Removal of corrosion products from each cannon revealed they were in pretty good shape considering their lengthy immersion in the river. Subsequent to deconcreting the exteriors and bores, the cannons were soaked in a Sodium Hydroxide solution to extract the salts, with only the VII-in Brooke rifle undergoing electrolysis to stabilize the more extensive corrosion suffered from periodic exposure during low river levels. After three and a half years soaking in the solution, the cannons were rinsed several times with deionized



Figure 5: WLCC conservator removing cocoon from exterior of the Dahlgren. (Photo courtesy WLCC)

water and then wrapped in plastic and slowly air dried to remove moisture. The cannons were then coated with a durable outdoor coating, first applying a white layer and then finished with a final black layer. Painting the undercoating white allows for monitoring inspections to reveal any deterioration of the outer black coating and point out areas requiring re-application or remedial treatment.

Restoring the exteriors and bores to their near original surfaces revealed details and markings heretofore obscured by the cocoon. Cleaning the Dahlgren's breech area exposed finer details of the rear sight mass, flanked on either side by the locks for the hammer-lock used to fire the cannon, including the copper-alloy insert in the clevis of the reserve lock (Figures 6-7). Cascabel details of the Brooke rifles revealed the jaws with blocks and pins used to secure the recoil line to the cannon. Close inspection showed the serial number S 46 on the top jaw and the block of the VII-inch (Figure 8). The muzzle sights for the Brooke and Dahlgren had unique differences, where the Brookes had a built-up three ridge sight, the Dahlgren had two shallow scooped areas to form a single ridge sight (Figure 9). Other exposed markings engraved on the cannons were noted on the muzzle faces, each trunnion face, at the top area of the breech, and on the rear of the cascabel. Markings denoted serial number, bore size, weight, year, and inspector. Heavy coating of the exterior with paint obscured



Figure 4: Lowering the VII-inch onto its carriage. (SCIAA photo)





Figure 6: Rear view of IX-inch Dahlgren breech with rear sight mass, flanked by locks on either upper side, with forward sight mass. (Photo courtesy WLCC)

some of the smaller engravings, although the larger ones are still visible. None of the sighting accessory mechanisms, for example the rear elevating and forward fixed sights, or hammer-locks were recovered for the cannons (Figure 10). In the future, we hope to have the sighting and firing accessories recovered from the CSS *Georgia* in the Savannah River, the USS *Westfield* in the Houston Ship Channel, and other appropriate sources digitized and 3D-printed to demonstrate their form and function for interpretive purposes.

As written in an earlier *Legacy* article (Vol. 21, No. 1, June 2017, pages 4-9), each of the cannons were armed for action. Both Brooke rifles had a stand of grapeshot, while the Dahlgren had a fused, sabotted, and strapped shell; behind each projectile was remnants of a gun powder bag. Analysis of the grapeshots and shell suggested they were of Confederate manufacture, for instance, the mold seams and body of the individual



Figure 7: Copper-alloy insert bearing size and serial number in the unused lock of the Dahlgren. (Photo courtesy WLCC)

shots were uneven and rough while measurement of the interior depth of the shell matched known examples (Figures 11-12). These artifacts were also conserved using appropriate methods to treat the metal, wood, and textile for curation and exhibition at the Florence County Museum.

It must also be noted that the cannons and the projectiles and associated artifacts recovered from them remain the property of the General Services Administration, a Federal entity that assumed title to abandoned Confederate property after the war. Under a loan agreement brokered between the State and County, the objects will remain on display in perpetuity if the artifacts remain in good condition. Yearly inspections to monitor the cannons will occur, and every five-years the museum in consultation with the SCIAA and WLCC will prepare and send a report of their condition to the GSA. These inspections will serve to address any weathering of the coatings and to apply remedial actions to prevent any long-term damage to the cannons.

For further information about the historical and archaeological aspects of the cannons and scuttled gunboat, the reader is directed to several previous newsletter articles in the following *Legacy* issues: Vol. 13, No. 2, August 2009, pages 1, 4-8; Vol. 19, No. 2, December 2015, pages 1, 4-9; Vol. 20, No. 1, July 2016, pages 26-30, and *Quarterly Reporter* Vol. 1, No. 4, 2011, pages 4-5. All these articles are available online at the SCIAA's webpage: <https://artsandsciences.sc.edu/sciaa/current-legacy-publications> and at Scholar Commons <https://scholarcommons>.

[sc.edu/leg/](https://artsandsciences.sc.edu/leg/). Additionally, one of our partners, Ted Gragg with the CSS *Pee Dee* Research and Recovery Team, augmented his first book about the shipwreck and cannons by incorporating a second book to provide an update on the recovery and treatment phase that includes chapters by the various principals associated with the project over the years. The book is entitled, *Guns of the Pee Dee: The Cannon Recovery*, which provides a good public-oriented document recounting the historical and archaeological aspects of the project and is available for ordering on Amazon.com.

In conclusion, the display of the cannons between where past soldiers and sailors lay and present and retired service personnel obtain assistance aims to serve as a testament to American service



Figure 8: Rear view of VII-inch Brooke cascabel showing upper and lower jaws with block and square-headed pin. Note serial markings on top jaw and block, and groove at lower block and jaw presumably to key the piece in place. (Courtesy WLCC)

and sacrifice rather than as a memorial to a disputed and contentious past. Memorialization of Confederate leaders and objects is fraught with tensions as most South Carolinians know, but we hope that this display will serve as an educational vehicle to learn about the conflict and reasons for the presence of a scuttled Confederate gunboat 60-miles upriver in the Great Pee Dee River at Mars Bluff. That is what we hope that these historical and archaeological artifacts become while silently attesting to the war





Figure 9: Views of muzzle sights of Dahlgren, on left, and Brooke, on right. (SCIAA and WLCC photo)

from which they came.

As may be expected from an endeavor involving the movement of extremely heavy and large objects several organizations and individuals participated in the successful install of these cannons, namely Florence County and Museum, Andrew Stout, museum director, securing the crane company and other aspects; U.S. Department of Veterans Affairs, providing the lunch and access to facilities; Glenn Dutton and Rufus Perdue, principals, Long Bay Salvage, LLC, arranging transportation of the cannons; WLCC conservators, Dr. Stéphanie Cretté, director, Johanna Rivera-Diaz, Anna Funke, and Gyllian Porteous, assisting on the placement and final touches to the cannons; Ted and Connie Gragg, Bob and Chad Butler, CSS *Pee Dee* Research and Recovery Team; Maritime

Research Division personnel Ryan Bradley and Nate Fulmer; SCIAA colleagues Dr. Steven Smith, director, and James Legg, research archaeologist; Jack Melton, Civil War ordnance expert, research assistance; Drs. Bruce and Lee Foundation, a private Florence foundation, for the \$200,000 necessary to recover, preserve, and display the cannons and associated artifacts.



Figure 11: Note uneven cast seam of grapeshot suggesting Confederate manufacture. (Photo courtesy WLCC)



Figure 10: Detail of photograph showing sighting and percussion devices on IX-inch Dahlgren aboard an Union gunboat. (Photo courtesy of the Naval History and Heritage Command)



Figure 12: Top view of conserved IX-inch shell with fuse removed. (Photo courtesy WLCC)



# Three-Dimensional Photogrammetric Modeling Program

By Ryan Bradley

The Maritime Research Division (MRD) was awarded an Archaeological Research Trust (ART) grant in January 2019 to establish a three-dimensional photogrammetric modeling program to render artifacts and objects in three dimensions. Funds were used to purchase a Canon Rebel T7i digital single-lens reflex (DSLR) camera package with multiple lenses, filters and accessories, a SeaLife DC2000 underwater camera with housing, the SeaDragon 2300 UW Photo-Video-Dive Light, the Agisoft Metashape 3D modelling software and a state-of-the-art desktop computer to handle the processing demands for accurate digital reconstruction.

Photogrammetry is the method of producing 3D models by capturing numerous images of an object or site from multiple angles and inputting that data in the Metashape software that aligns the images, produces a point cloud, and then creates a 3D model. Models created through this process can be used for various monitoring, management, and conservation purposes, as well as effective outreach and education capabilities. The MRD plans on utilizing these capabilities for several ongoing and future projects.

Thus far, the author has teamed up with South Carolina Department of Natural Resources (SCDNR) Heritage Trust Program archaeologist, Meg Gaillard, and



Figure 2: Ryan Bradley takes one of hundreds of photographs needed to document the artifact for 3D modeling. (SCIAA photo)

Richland County forensic anthropologist, Dr. Bill Stevens, to photogrammetrically model human remains. Dr. Stevens presented on his research at the recent American Academy of Forensic Sciences in Seattle, WA, utilizing the 3D model in his talk. An article written by SCDNR intern Brooks Taylor about the recovery of the remains can be found by visiting this address: <https://www.southcarolinawild.org/2018/09/04/forensic-archaeology/>. Going forward, the data collected by the collaboration has the potential for future

endeavors in 3D facial reconstruction.

Around SCIAA, I have begun modelling various artifacts recovered from submerged sites over the years. Recently, archaeologist Dr. Chester DePratter took a renewed interest in artifacts that were recovered from the submerged portions of the Mulberry site (38KE12) located on the Wateree River near Camden back in 1988. A few choice pieces were selected for modelling from the vast collection due to their distinguishing characteristics or relative completeness. Examples are included in this article and will be used for education and outreach initiatives.

Additionally, a marine toilet, or “head” recovered from the blockade runner SS *Georgianna* was 3D-modelled for further analysis and research. Similar marine toilets, with porcelain bowl encased in lead with mechanical flushing components, were recovered from CSS *Alabama* off the coast of France by the Naval History and Heritage Command and the SS *City of Launceston* by the Australasian Institute of Maritime Archaeology in waters off Victoria, Australia, which will be used for comparative analysis of 19<sup>th</sup> century shipboard privies.



Figure 1: Ryan Bradley positions an artifact for 3D photogrammetry modeling. (SCIAA photo)



# SUBMERGED Essay Contest Winner

By Ryan Bradley

The Maritime Research Division (MRD) would like to recognize Mackenzie Archie for submitting the 1<sup>st</sup> place essay in the 2019 SUBMERGED: SC Underwater Archaeology essay contest. The contest was open to all 8<sup>th</sup> grade students who participated in this year's educational programming provided by members of MRD and supported by a Major Grant by the SC Humanities Council. Ms. Archie, who finished her 8<sup>th</sup> grade year at Rawlinson Road Middle School in Rock Hill, SC in May 2019, chose the Brown's Ferry Vessel as her research subject. Her essay is provided below:

*The Browns Ferry Vessel, also known as the Black River Boat, was a ship that sank in the 1730-40s in the Black River near Browns Ferry Landing. The ship was said to be carrying some sort of building cargo, in fact it was filled with bricks, because contrary to its name the Browns Ferry Vessel was indeed not used for ferrying. It was excavated from the Black River by archaeologists from the SC Institute of Archaeology and Anthropology in the summer of 1976 since it was deemed important and historical by the state. Once recovered, it was then transferred to USC Columbia to undergo treatment using polyethylene glycol. For over a decade the ship underwent preservation treatment and then was sent to the Rice Museum in Georgetown in 1992. Just before being sent, however, Fred Hocker from Texas A&M Nautical Archeology program came to study the ship's design along with earlier contributor Dick Steffy from the Institute of Nautical Archeology. Both researchers came to study the ship's vessel lines and Steffy would go on to make a model, which would be used for exhibition. In 1992, 16 years after excavation, the Browns Ferry Vessel was put into the Rice Museum in Georgetown, which 27 years later you can still visit today.*

We would like to thank all the students who submitted to the essay contest, as well as the teachers and administrators who participated in SUBMERGED. This program would not have been possible without funding from the SC Humanities Council.



Figure 3: A 3D model of an ornate pot recovered from the Wateree River over 30 years ago. (SCIAA photo)

As the MRD continues to hone and expand its 3D modelling capabilities, work will begin on submerged sites in the coming cold-weather months when visibility improves, and offshore-site visitation commences. The MRD would like to thank the ART board for the funding and opportunity to utilize this emerging technology for the betterment of the Division's research capabilities and education and outreach initiatives.



Figure 4: A 3D model of a skull. (SCIAA photo)



Figure 1: Mackenzie Archie is the winner of the Submerged Essay Contest with Mr. Brian Herring, her 8<sup>th</sup> grade social studies teacher at Rawlinson Road Middle School. (SCIAA MRD photo)

# Reconstructing Lowcountry Plantation Waterfronts

By Emily Schwalbe

*Editor's note: Emily Schwalbe is a PhD candidate in Anthropology at Northwestern University. She previously worked as an archaeologist at the Warren Lasch Conservation Center and has an MA in the Program of Maritime Studies from East Carolina University.*

As many South Carolina divers know, Lowcountry rivers are filled with history and material remains of the past. Inland waterways were the primary means of transportation in South Carolina during the early years of European settlement before there was sufficient infrastructure for other means of travel, such as roads. As South Carolinians expanded their plantation holdings, navigable waterways became increasingly significant for the movement of commodities and people, and in order to maximize their ability to utilize this resource, colonists extended the built environment into the water in the form of wharves, docks, rice gates and mills, and watercraft. I have been interested in this aspect of Charleston-area waterways since I interned with the Maritime Research Division (MRD) in 2016 and have been lucky enough to partner with MRD to



Figure 2: Remote Sensing survey near Hampton Plantation, (left to right) Emily Schwalbe, Nate Fulmer, and Jim Spirek. (SCIAA photo)

work on my doctoral dissertation at Northwestern University reconstructing Lowcountry plantation waterfronts as an extension of the landscape. The study focuses on five historic plantations: Hampton and Wambaw plantations on Hampton and Wambaw Creeks off the South Santee, and Mepkin, Rice Hope, and Lewisfield plantations on the West branch of the Cooper River.

The MRD and I began remote sensing operations in December 2018 to locate submerged features associated with

Hampton and Wambaw plantations, using a side scan sonar system to tentatively identify several wharves, evidence of logging activity, and submerged watercraft. This stage of the project was done in conjunction with archaeologists at the Hampton Plantation State Historic Site, who were also interested in any features we might locate. The second phase of the project focused on the Cooper River plantations. The MRD and I ventured out again in the immediate aftermath of Hurricane Dorian to complete both side scan sonar and magnetometer surveys of the remaining three plantations. This data is currently being processed, but initial evaluations suggest that there are historic wharves, watercraft, and rice gates present along these plantations as well. The anomalies identified as part of the remote sensing work suggest multiple potential archaeological sites that will be investigated in upcoming field seasons.

Ultimately, this project will form the basis of my dissertation focusing on the ways that free and enslaved individuals on colonial and antebellum plantations used waterway infrastructure in commodity production, surveillance, and communication in order to better understand the everyday life of this period. The goal of my dissertation is to further previous research of terrestrial sites by

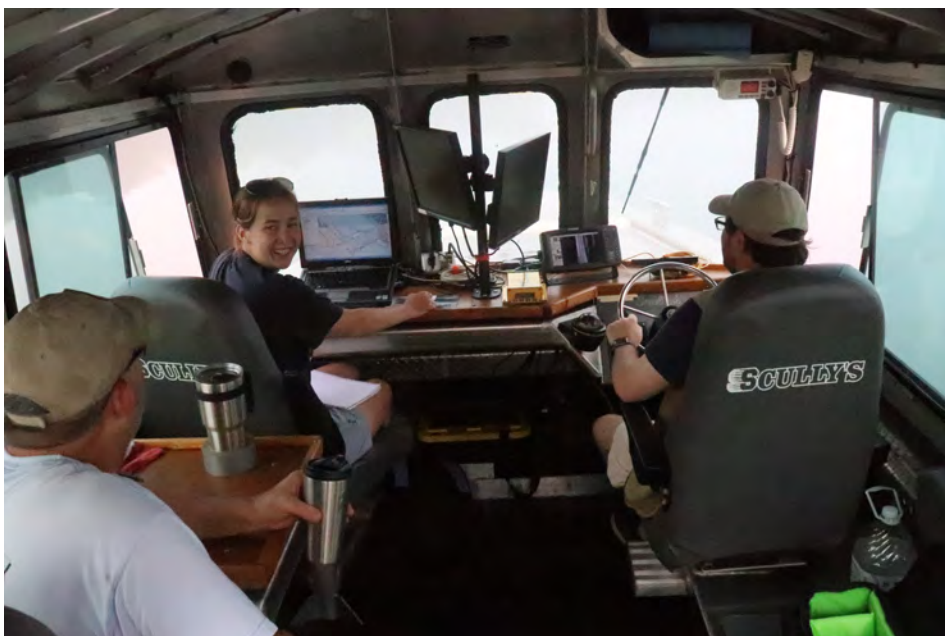


Figure 1: PhD candidate, Emily Schwalbe gets remote sensing pointers from state underwater archaeologist, Jim Spirek, while Nate Fulmer navigates through the morning fog on the Cooper River. (SCIAA photo)





Figure 3: A side scan sonar sonogram shows a shipwreck and other submerged cultural resources in the Cooper River. (SCIAA graphic)

integrating identified submerged sites, including docks, wharves, watercraft, and evidence of rice agriculture, into the terrestrial landscapes. This will be done by comparing locations of submerged sites and excavated material culture with historical maps and the results of terrestrial excavations. Types of features, location, and frequency will help reveal their purpose and usage, further contributing to our understanding of everyday life on antebellum plantations. Moving forward, I plan to dive targets located as part of the



Figure 5: A view from the Cooper River of the remains of an old mill house on Comingtee Plantation. (SCIAA photo)



Figure 4: Ryan Bradley and Jim Spirek pitch a cesium magnetometer in the Cooper River for detection of ferrous metals. (SCIAA photo)

remote sensing work in order to confirm their identity and complete this integration, extending the concept of a plantation landscape into the water. These next steps would not be possible without MRD's remote sensing assistance over the last year, and I am very thankful for the time and effort Jim, Ryan, and Nate put into the fieldwork both in 2018 and over the summer of 2019.



Figure 6: A Cooper River local observed our survey at a distance. (SCIAA photo)



Figure 7: A sonogram of a barge wreck in the Wambaw Creek. (SCIAA graphic)



# Underwater Archaeology Film Track Debuts at 7<sup>th</sup> Annual Arkhaios Cultural Heritage and Archaeology Film Festival in Columbia, South Carolina

By James Spirek

For a world covered in approximately three-quarters of water, it's not surprising that humans have a rich and long relationship with traversing, exploiting, and living alongside the oceans, lakes, and rivers that cover the Earth's surface. Beneath these diverse waterbodies lies several millennia worth of the physical record of humankind preserved in prehistoric and historic shorelines, shipwrecks, inundated cities, harbor works, and other remnants of our past.

The discipline of underwater archaeology focuses on this human connection with the watery domain through the study of these archaeological remains to learn more about past human cultures and behavior. An important aspect of the Maritime Research Division's (MRD) mission is to promote an awareness and appreciation of underwater archaeological sites and therefore agreed to sponsor and organize the inaugural underwater archaeology film track at the 2019 7<sup>th</sup> Annual Arkhaios Cultural Heritage and Archaeology Film Festival in Columbia, SC.

The MRD has worked in the past with Jean Guilleux, founder and director of the film festival, to identify and present films with an underwater archaeology

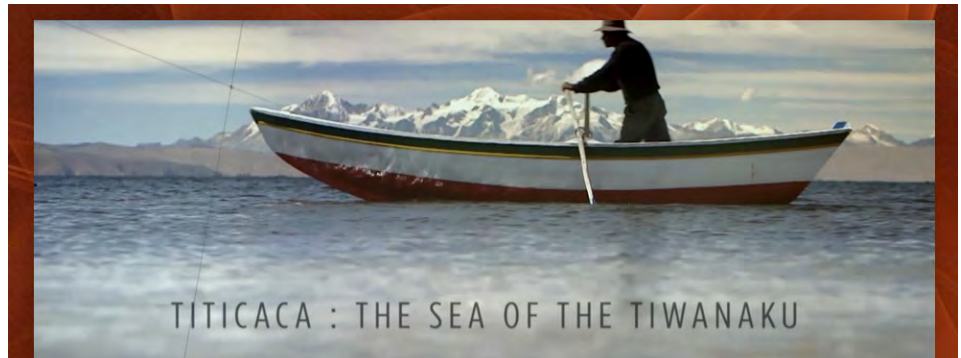


Figure 2: Arkhaios promotional photo for the film, *Titicaca, the Sea of the Tiwanaku*. (Photo courtesy of 7th Arkhaios Cultural Heritage and Archaeology Film Festival)

theme. Past films focused on documenting the remains of an American whaler sunk off the Hawaiian Islands in the early 1800s and recovering the remains of the scuttled ironclad CSS *Georgia* from the Savannah River. Wanting to provide a more sustained underwater archaeology track, Jean suggested joining forces to identify, select, and present several films on this topic. For this initial track, three films were selected for screening that featured two shipwrecks and a pre-Incan civilization in the Andes. Opening night in Columbia was devoted to launching the new Underwater Archaeology Film Track featuring the first two films and the last film showing later in the festival, which unfortunately due to time constraints was

not shown to the audience.

The first film screened was *The Lions of Lissa*, that centered on the remains of the Italian armored battleship *Re d'Italia* that sank during the 1866 naval battle of Lissa in the Adriatic Sea (Figure 1). The battleship was one of the casualties of the world's first armored fleet action that occurred during the process of Italian unification in the 19<sup>th</sup> century. The film was a blend of ethnography, archaeology, history, mythology and underwater exploration—all combined to form an imaginative journey of the people and naval history of the region. Despite the limitations of working at a depth of over 380 feet, the film maker and his crew of technical divers managed to create a surreal and evocative underwater landscape centered on the remains of the shipwreck. Before screening the film, a SKYPE interview with the director of the movie, Nicolò Bongiorno, from his home in Italy, provided an opportunity to ask questions about his inspiration for choosing this topic and the challenges, especially on choreographing divers, lights, and cameras, on filming the deep-water shipwreck. The film was also shown at the 2019 Trieste Film Festival and was a Winner at the 2019 Firenze Archeofilm festival.

The second film shown on opening night was entitled, *Titicaca, the Sea of*



Figure 1: Scene of a diver on the wreckage of the *Re d'Italia* from the film *The Lions of Lissa*. (Photo courtesy of 7th Arkhaios Cultural Heritage and Archaeology Film Festival)



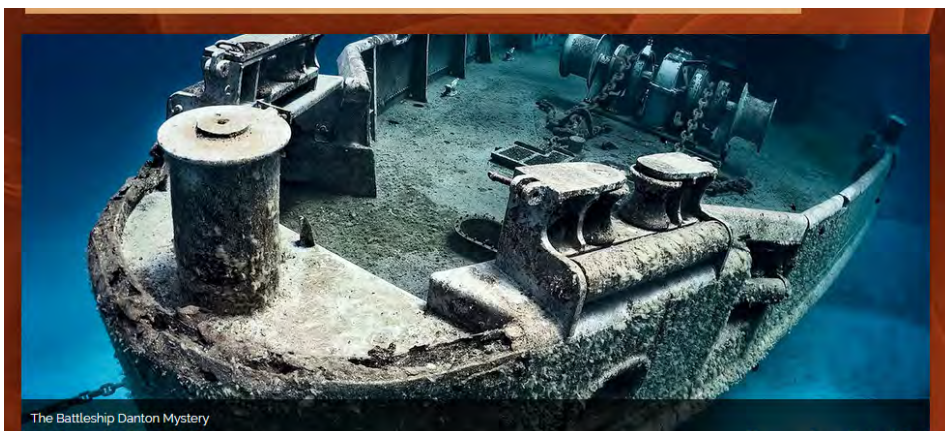


Figure 3: Arkhaïos promotional photo for the film, *Deep Water Investigations—The Battleship Danton Mystery*. (Photo courtesy of 7th Arkhaïos Cultural Heritage and Archaeology Film Festival)

the *Tiwanaku*, that focused on a team of Belgian and Peruvian underwater archaeologists exploring Lake Titicaca, high in the Andes, that straddles the present-day borders of Bolivia and Peru (Figure 2). The underwater archaeologists were interested in shedding light on the Tiwanaku, a civilization that pre-dated the Incas, who held this lake sacred. And while the team was focused on the sacred nature of the lake evidenced through offerings and ceremonial artifacts, they also uncovered aspects of its secular use supported by artifacts revealing daily life alongside the lake. The investigatory techniques shown in the film, of divers and excavation are common practices to uncover evidence lying submerged on the bottom. Interestingly, while the first film highlighted the technical nature of diving due to the depth of the site, the divers encountered in this film must deal with the opposite—height. The setting of the lake high in the Andes presented a different set of problems to solve and address to ensure safe diving. In addition to using traditional techniques to explore this past civilization, they also relied on Computer Graphic Imagery technology to explain the ruins and development of the Tiwanaku alongside the lake. An important aspect to the film was the archaeologists working alongside and showing cultural sensitivity to the local population and their belief system.

The last scheduled film of the Underwater Archaeology trilogy was called, *Deep Water Investigations—The Battleship Danton Mystery*, that focused

on the World War I French battleship *Danton* sunk in the Mediterranean. The battleship was discovered during a submerged cultural resource survey and subsequently investigated by a team of French underwater archaeologists (Figure 3). This investigation required state of the art undersea technology to access the shipwreck at a 3,280-foot depth. The film blended archaeological data with historical information as the underwater archaeologists worked to solve the identity of the shipwreck—identified as the World War I French battleship *Danton* torpedoed by a German U-boat in 1917. Festival attendees were disappointed that, due to time constraints, the film was not shown, but perhaps, it will get a second chance for viewing at the 8<sup>th</sup> Annual film festival in 2020.

The film festival concluded with a live-streaming award ceremony to

recognize those films having special merits as selected by the awards jury and audience (Figure 4). The award for Best Underwater Archaeology Film went to *The Lions of Lissa*, particularly acknowledging its excellent land and underwater cinematography and focus on the ethnography of the maritime heritage of the region. The other two underwater archaeology selections each received Honorable Mentions for Best Underwater Archaeology Films, with, *Deep Water Investigations—The Battleship Danton Mystery*, also receiving an Honorable Mention for Best Archaeology Film.

With this new Underwater Archaeology Track, the MRD and organizers want to provide a sustained effort at the film festival to explore the diversity of topics of study by underwater archaeologists. This inaugural offering featuring three films documenting a shipwreck of a battleship sunk in the late 1860s in the Adriatic Sea, exploring the sacred and secular uses of a lake high in the Andes by a pre-Incan civilization, and investigating a battleship from World War I in the Mediterranean paves the way for other intriguing films exploring the many and varied means humans have coped with our aqueous world. We look forward to arranging next year's slate of films for the festival. For more information about upcoming film festival programs please visit the website: [www.arkhaïosfilmfestival.org](http://www.arkhaïosfilmfestival.org).



Figure 4: Jean Guilleux and James Spirek presenting underwater archaeology track awards. (Photo courtesy of 7th Arkhaïos Cultural Heritage and Archaeology Film Festival)



# Research

## The Mysterious Island Fort in Charleston Harbor: Breaking Ground at Castle Pinckney

By John Fisher

In August of 2019, I partnered with landowners and stewards from the Castle Pinckney Historical Society, Dr. Jonathan Leader, and Giles Dawkes of University College London to investigate Castle Pinckney on Shute's Folly in Charleston Harbor (Figure 1). Grants were provided by the Archaeological Research Trust (ART) at SCIAA and The Society for Post Medieval Archaeology (SPMA). This 2019 field season is part of a three-year internationally collaborative effort, in attempt to survey and document an at-risk National Register site.

The island of Shute's Folly has been used for many purposes throughout the years from a believed place of execution for pirates; to an orange grove; to the first installment of a fort during the American Revolution where General Benjamin Lincoln sank eight ships in order to create a barrier to block British ships from moving further into the harbor and the surrounding waterways. The final military use of the island, which is the focus of the ongoing survey, was the construction of Castle Pinckney (Langhorne and Lewis 1978; Petit 1969). Built in 1809 alongside



Figure 2: The 1821 pattern artillery button recovered from Castle Pinckney in the first excavation season of 2019 with 'A' visible in the sheild. (Albert 1976). (Photo by John Fisher)

Fort Moultrie, now a National Park Service site, Castle Pinckney was constructed to protect Charleston Harbor due to rising tensions with European powers. The fort was a second system two-tiered masonry fort built during a series of seacoast

fortification efforts and is one of the last of its kind that did not undergo serious alteration or dismantling (Lewis 1979). It was designated as a National Monument in 1922 by Calvin Coolidge, lost this protected status in 1954, and fell into disrepair (Langhorne and Lewis 1978). It is currently at risk to environmental and trespassing threats.

The fort was garrisoned from 1818 to 1819 by the First and Second Battalions of Artillery. A pattern 1821 artillery button was recovered from an exciting feature, (which will be presented in the next issue of *Legacy*), located in a trench dug by the team in August 2019 (Figure 2). Castle Pinckney remained largely unaltered until 1829, when the addition of a sea wall was recommended in order to strengthen the foundation, an issue that still plagues the site (*Year Book 1883: City of Charleston, So. Ca.: The Centennial of Incorporation:*



Figure 1: Castle Pinckney following a day of excavation in August 2019. (Photo by John Fisher)





Figure 3: Photo showing some of the prisoners from the first Battle of Bull Run housed at Castle Pinckney in 1861. (Photo courtesy of Library of Congress, <https://lccn.loc.gov/2013651616>)

1883). Outside of this, the only other changes were that of a palisade and the emplacement of several 24-pound cannons in 1833 (Langhorne and Lewis 1978; Young 1938).

In 1835, the garrison was removed and transferred to St. Augustine due to the outbreak of the second Seminole War (Lewis and Langhorne 1978; Young 1938). The fort largely fell into disrepair until 1855, when Congress appropriated funds to repair the fort and add a navigation light. It was during this period that the fort served as Charleston's powder house until the outbreak of the American Civil War (Lewis and Langhorne 1978; Young 1938). Castle Pinckney would continue to serve a multitude of purposes during the American Civil War that are of interest to this project.

During the American Civil War, Castle Pinckney served as the home for the first Union prisoners of the war, captured at the Battle of First Manassas, also known as 'Bull Run' (Figure 3). It was during this phase that the fort became a source of armament for surrounding batteries. Their quickly outdated ordnance technology was of no use against ships like that of the iron clad navy. Due to this threat, many other batteries and forts were reworked with large earthworks and larger updated smoothbore and rifled guns, like that of

the Columbiad and Brooke Rifle. In 1864, Pinckney underwent these very efforts when it was reinforced and filled with sand to create a barbette battery that was comprised of three 10-inch Columbiads and one 7-inch Brooke Rifle (Figure 4) (*Year Book 1883: City of Charleston, So. Ca.: The Centennial of Incorporation: 1883*).

In 1865, the fort was abandoned by Confederate troops and then reoccupied by Union forces. Castle Pinckney would go on to serve as a prison once again for blockade runners and other enemies of the state. In 1878, the fort was transferred to the Treasury Department in order to build a lighthouse. The site was then filled in, much like Fort Sumter and Fort Moultrie, in order to support the new intended use, thus creating a time capsule of sorts.

Surveyed by SCIAA's own Kenneth E. Lewis and William T. Langhorne (1978), Castle Pinckney had never been excavated until funding by ART and SPMA allowed the project to go forward in 2019. With the help of other local collaborative efforts, including the South Carolina Department of Natural Resources (SCDNR) and the College of Charleston's Dr. Scott Harris, the team was able to secure transport to and from the island. Unfortunately, due to Hurricane Dorian, the team was only allowed five full days for excavation. These five days, however, led to three full

trenches being started and a wealth of information being gathered as to the latter use of the fort as a lighthouse and finally the Civil War occupation period.

During this first season in 2019, the team was able to put in three trenches at key points inside the structure, the barracks, the magazine, and the 1809 parapet. All three of these trenches were successful in locating Civil War period artifacts and architectural remnants from early to late periods of the use of Castle Pinckney as a fort. The button mentioned above (Figure 2), a period pipe bowl fragment, and much more were recovered from deep excavations alongside key features, more of which will be covered in the next issue of *Legacy* following permission from the landowners and continued funding.

These efforts were of great significance to the understanding of the fort and early Federal seacoast fortifications. Thankfully the members of the Castle Pinckney Historical Society, a 501(c)3 charity, are focused on documenting and preserving as much as possible at the site. It is my hope and that of the team that this first season in 2019 and the forthcoming articles will demonstrate the significance of our internationally collaborative efforts here at CPHS, SCIAA, UCL, and South Carolina at large to understanding such a significant yet unexcavated site. Thanks to the CPHS, the Archaeological Research Trust (ART), the Society for Post Medieval Archaeology (SPMA), University College London, and several SCIAA staff the Castle Pinckney Project is off to a great start. Stay tuned to the next exciting edition of *Legacy* in July 2020, for the first season's full report.

We would also like to thank the following volunteers, students, and key individuals who made this excavation season a success:

### **Lectures, Guidance, and Assistance:**

Dr. Steve Smith, SCIAA Director; Jim Legg, SCIAA; Nena Powell Rice, Archaeological Research Trust (ART); Dr. Jennifer Pournelle, Research Professor, USC; Stacey Young, Applied Research Division, SCIAA;



yale.39002005105896, accessed February 19, 2019.

Lewis, Kenneth E, and William T Langhorne, Jr.  
1978 *Castle Pinckney: An Archeological Assessment with Recommendations. Research Manuscript Series 128.* Institute of Archeology and Anthropology, University of South Carolina. <http://www.castlepinckney.org/category/articles/>, accessed February 19, 2019.

Lewis, Emanuel R.  
1979 *Seacoast Fortifications of The United States: An Introductory History.* Pictorial Histories, Missoula, Montana.

Petit, James P.  
1969 *Out of Oblivion: Castle Pinckney. The Sandlapper* 2(7):66-75.

Young, Rogers W.  
1938 *Castle Pinckney, Silent Sentinel of Charleston Harbor. The South Carolina Historical and Genealogical Magazine* 39(1):1-14. <http://www.jstor.org/stable/27571521>, accessed February 19, 2019.



Figure 4: An Interior photo taken of Castle Pinckney in 1865 where earthworks, a 10-inch Columbiad, and a 7-inch Brooke Rifle can be seen in the background. (Photo courtesy of Library of Congress, [www.loc.gov/item/2018666905/](http://www.loc.gov/item/2018666905/))

Heritage Trust; Paulette Mikell and Fred Dockery, SCDNR Vessel Operations; Felicia Sanders and Janet Thibault, Wildlife Biologists, SCDNR; Scott Harris, College of Charleston, and Grahame Long and Martha Zierden, Charleston Museum

### Volunteers:

Lisa Buchanan and Larry Lane

### University College London Students:

Gina Harris, Claudia Harrington, Samuel Atkins, Emmy Davies, and Caragh Collinson-Murphy

### References Cited

Albert, A. H.  
1976 *Record of American Uniform and Historical Buttons, Bicentennial Edition, 5<sup>th</sup> ed.* Boyertown, Pennsylvania.  
Charleston, South Carolina and Courtenay, William A.  
1884 *The Centennial of Incorporation:*

1883:162-164. The News and Courier presses, Charleston, South Carolina.  
<https://hdl.handle.net/2027/>



Figure 5: Excavation at Castle Pinckney in August 2019 with University College London Student Gina Harris and Volunteers Lisa Buchanan and Larry Lane. (Photo by Giles Dawkes)



# South Carolina Archaeology Book

## ARCHAEOLOGY IN SOUTH CAROLINA

*Exploring the Hidden Heritage of the Palmetto State*

Edited by Adam King

Adam King's *Archaeology in South Carolina* contains an overview of the fascinating archaeological research currently ongoing in the Palmetto State and features essays by twenty scholars studying South Carolina's past through archaeological research. The scholarly contributions are enhanced by more than one hundred black-and-white and thirty-eight color images of some of the most important and interesting sites and artifacts found in the state.

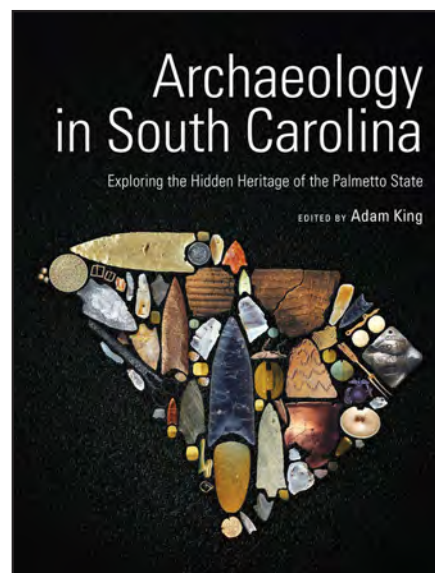
South Carolina has an extraordinarily rich history encompassing some of the first human habitations of North America as well as the lives of people at the dawn of the modern era. King begins the anthology with the basic hows and whys of archaeology and introduces readers to the current issues influencing the field of research. The contributors are all recognized experts from universities, state agencies, and private consulting firms, reflecting the diversity of people and institutions that engage in archaeology.

The volume begins with investigations of some of the earliest Paleo-Indian and Native American cultures that thrived in South Carolina, including work at the Topper Site along the Savannah River. Other essays explore the creation of early communities at the Stallings Island site, the emergence of large and complex Native American polities before the coming of Europeans, the impact of the coming of European settlers on Native American groups along the Savannah River, and the archaeology of the Yamasee, a people whose history is tightly bound to the emerging European society.

The focus then shifts to Euro-Americans with an examination of a long-term project seeking to understand George Galphin's trading post established on the Savannah River in the eighteenth century.

The volume concludes with the recollections of a life spent in the field by South Carolina's preeminent historical archaeologist Stanley South, now retired from the South Carolina Institute of Archaeology and Anthropology at the University of South Carolina.

March 2015, 304 pages, 38 color and 103 b&w illus.



**Adam King** is a research associate professor in the South Carolina Institute of Archaeology and Anthropology and special projects archaeologist for the Savannah River Archaeological Research Program at the University of South Carolina. King has conducted research in the Southeast since 1987 and specializes in the Mississippian period and the political economies of chiefdoms. He is the author of *Etowah: The Political History of a Chiefdom Capital*.

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# Archaeology on the Widdicom Tract at Hobcaw Barony

By Heathley A. Johnson

## Introduction

In 2014, I began working at Hobcaw North, a mixed component site on Hobcaw Barony, for Dr. Karen Smith, then Director of SCIAA's Applied Research Division. This early foray to the site was documented in the July 2015 issue of *Legacy*. Little did I realize at the time that I would still be doing work on the site five years later, having mostly taken over the project and turned it into the basis of a master's thesis. Countless hours have gone into doing research and fieldwork at the site, followed by the subsequent artifact analysis and conservation. The fieldwork portion of the first phase of work was completed this past summer. This article summarizes the work at the site to date, and looks forward to questions that still need to be answered.

Archaeological investigations of any

depth are rarely solo endeavors, and my work at Hobcaw North is no exception. Tamara Wilson of SCIAA has been a great benefit to the project, helping with every trip to the field, as well as providing guidance on the use of ArcGIS software. Karen Smith of South Carolina Department of Natural Resources (SCDNR) and Stacey Young, Director of SCIAA's Applied Research Division, volunteered in August 2019 to help with the excavation of test units. JoAnn Jarman, of the USC Baruch Marine Field Laboratory, also volunteered in August 2019 and had a chance to learn a bit more about archaeology, as well as providing wonderful logistical support for our stay at Hobcaw Barony. The Archaeological Research Trust (ART) provided a grant to help pay for logistics in August 2019. And, of course, none of this research would have been possible

without the support of the Belle W. Baruch Foundation. To all, go my appreciation.

## Background

Hobcaw Barony was originally granted in 1718 to John, Lord Carteret, one of the Lords Proprietors. The barony changed hands a few times prior to being split into numerous plantations that were sold off between 1766 and 1767. Before the barony was laid out, a 200-acre tract was sold to Alexander Widdicom in 1711; this tract subsequently had three different owners before passing into the ownership of John and Charles Cogdell by 1767, and later their heirs (Linder and Thacker 2001:11-14). The Hobcaw North site partially lies within the 200-acre Widdicom tract, which can be seen in a 1736 survey plat of Hobcaw Barony (Figure 1), when the tract was under the ownership of Samuel Masters.

Work at the site was originally oriented towards testing the ability of a metal detector survey to reveal site structure through artifact patterning analysis. Learning about the site in general was also one of the overall goals, as all that was known about the site was that it contained Native American pottery and 18<sup>th</sup> century European artifacts (Michie 1991). Towards this end, an arbitrary 51 X 51-meter search area was laid out to be surveyed with a metal detector. The search area was eventually expanded to roughly 60 X 70 meters in order to encompass the majority of the site as defined by metallic artifacts. The survey was completed during five visits to the site, spanning from 2014 to 2017.

It was also during this time that I began to think about developing my work at the site into a thesis, and I subsequently enrolled in the graduate school at St. Cloud State University in Minnesota, where I am pursuing a master's degree in the Cultural Resource Management Archaeology program. During the metal detector survey of the site, research questions and methods

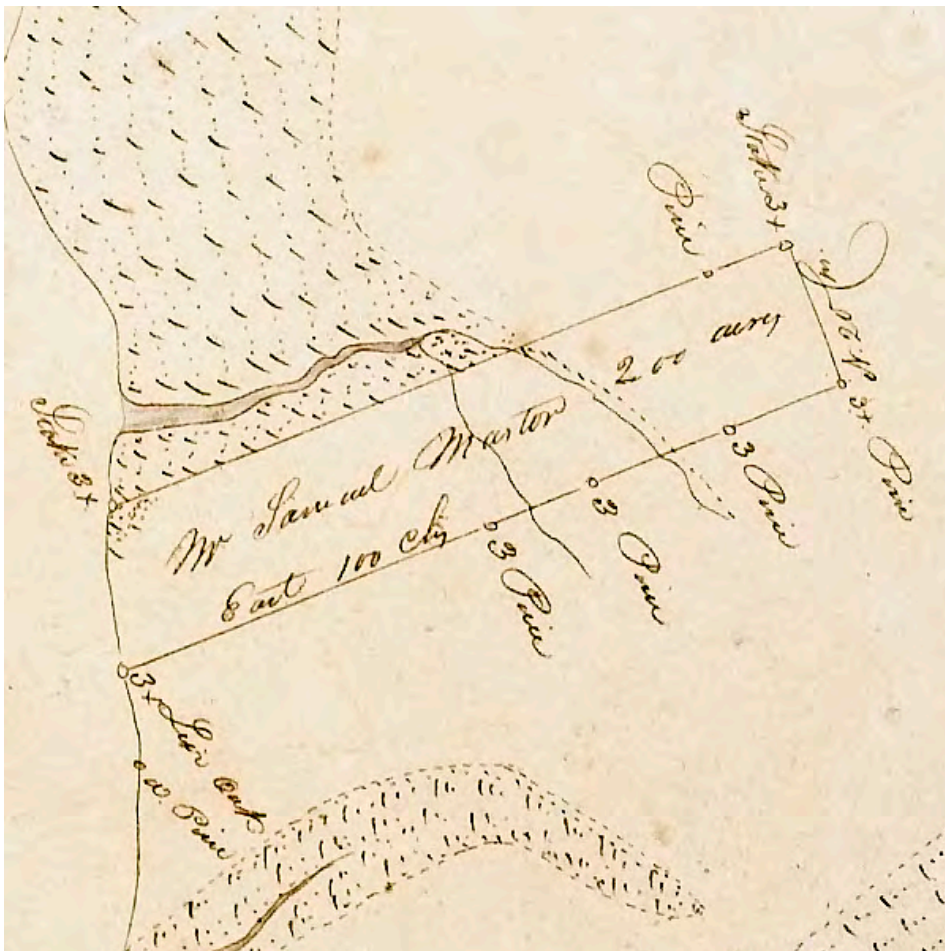


Figure 1: Detail of a 1736 plat of Hobcaw Barony showing the 200-acre Widdicom tract, then under the ownership of Samuel Masters. (Courtesy SC Department of Archives and History)

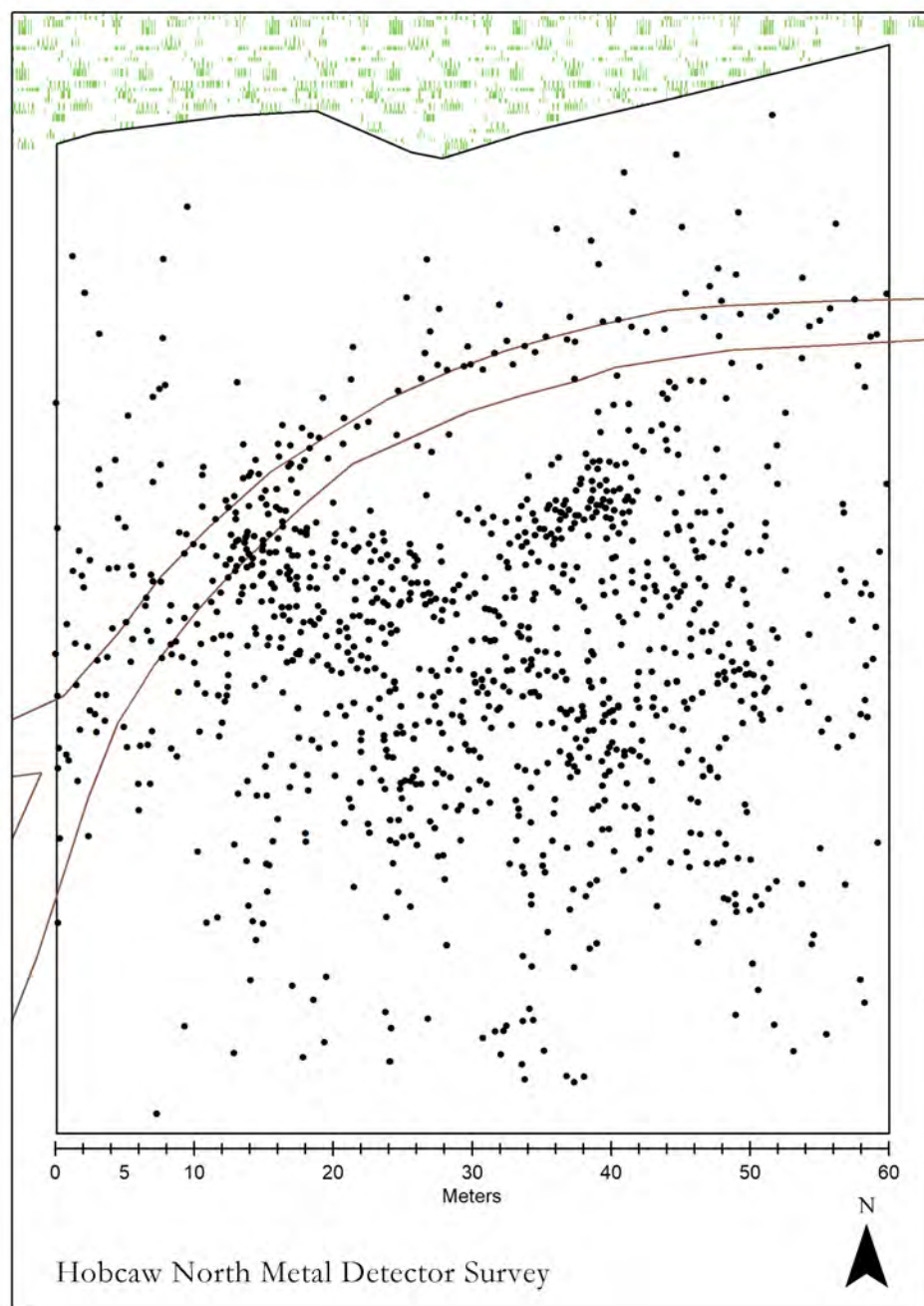


Figure 2: Metal detector survey map of the site. Black dots indicate the location of excavated readings. (Map drawn by Heathley A. Johnson)

were refined somewhat, and additional questions were also developed as part of my thesis. One goal was to see how the information gained from a metal detector survey compared to that gained from a traditional shovel test survey. Towards this end, in June and July 2019, the area surveyed by metal detector was surveyed by shovel testing. In August 2019, I returned to the site to excavate test units. The location of the units was determined based on the distribution and density of various artifact classes recovered during the metal detector survey and were

designed to test the viability of a metal detector survey to reveal site structure.

### Fieldwork Results

The metal detector survey of the site was intended to provide 100% coverage of the search area. In total, 1,085 separate readings were excavated (Figure 2). The majority of the artifacts were 18<sup>th</sup> century in origin, with small hand-wrought nails being the dominant artifact recovered. Other artifacts included gun parts, lead shot, buttons and buckles, cast iron pot and kettle fragments, European and

colonoware ceramics, bottle glass, brick, and tobacco pipe fragments. A modest number of artifacts dating from the late 19<sup>th</sup> and early 20<sup>th</sup> centuries were also recovered, primarily small arms ammunition related to hunting. Also, Indian pottery and lithic debitage were prevalent across the entire site. Once the artifacts were analyzed, distribution and density maps were produced. Figure 3 shows a density map of all 18<sup>th</sup>-century artifacts. The map also shows that the main area of occupation of the site is in the middle of the survey area.

The shovel testing survey was conducted on a 10-meter interval grid; a total of 51 shovel tests were excavated, with 49 of them being positive. While the analysis and comparison of the two different surveys is still underway, a few interesting observations were readily apparent. The shovel testing revealed similar patterns of the site that were observed through metal detecting. The overall extent of the site as revealed by both methods was comparable (when looking at only the 18<sup>th</sup>-century artifacts), and both methods also indicated that the densest concentration of 18<sup>th</sup> century artifacts was the middle of the site. Another interesting observation was that there were entire artifact classes that were not found by shovel testing, such as lead shot, 65 of which were found during the metal detector survey.

During the testing phase of work, a total of 10 test units were excavated (Figure 4). The placement of the test units was determined by density maps for various artifact classes or functional groups found during the metal detector survey. The locations of the test units were based on the following artifact classes or groups: architectural, metal scrap (brass, lead, and pewter), lead shot, kitchen (cast iron vessels, ceramics, glass, utensils), and ceramics. Two units were also located in areas that had little to no metal. The analysis and interpretation of the results of this testing are still ongoing, but initial observations have been made. To some degree, the metal detecting data was able to successfully guide the placement of the



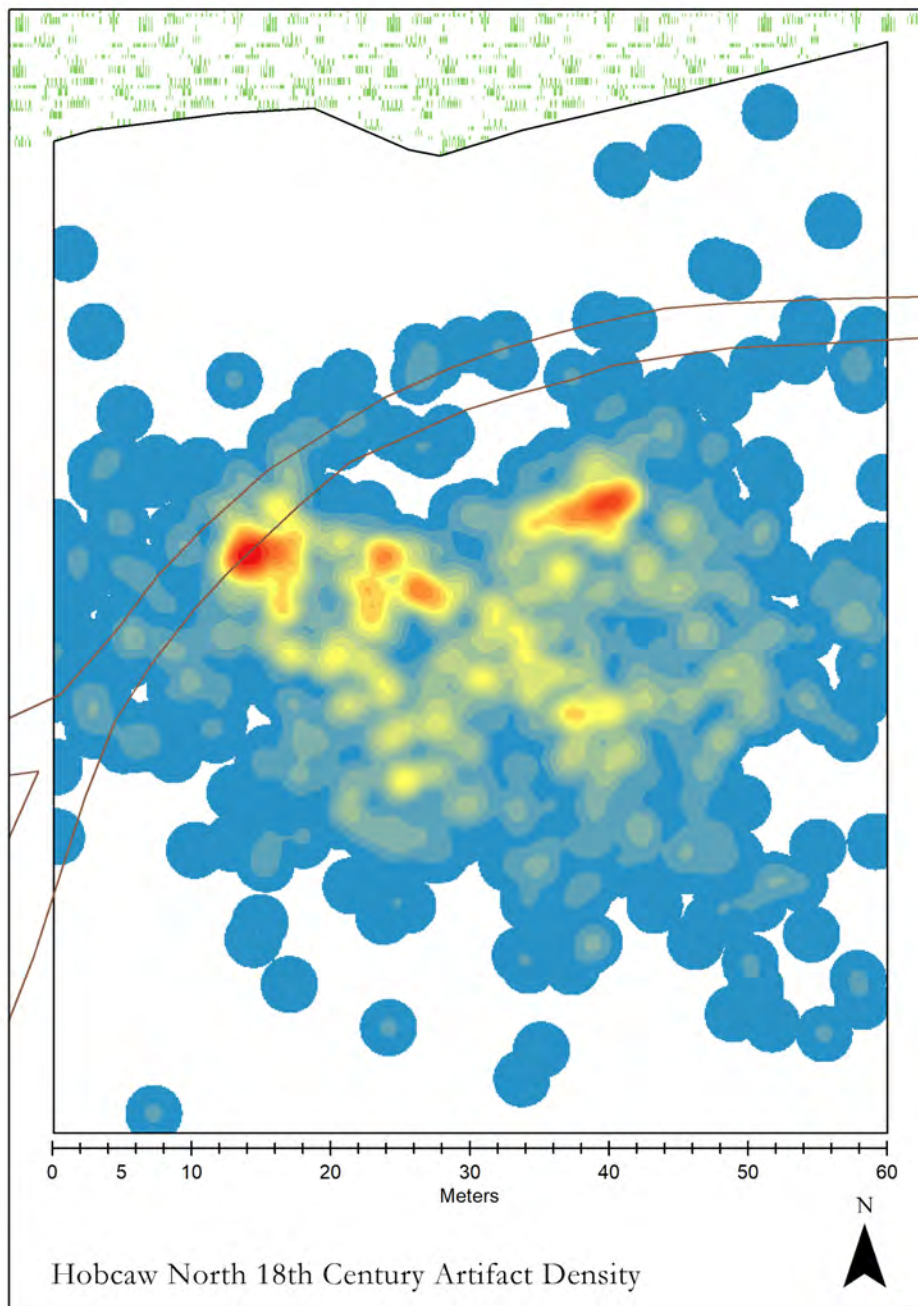


Figure 3: 18th century artifact density map of the site. Density increases from blue (low) to red (high). (Map drawn by Heathley A. Johnson)

test units such that features and activity areas were located. Two discreet features were found, one of which was a one-meter deep structural posthole. In the middle of the site, five of the units encountered a large sheet midden that averaged 20 centimeters in thickness. Sheet middens are amorphous deposits that form around areas of occupation and contain the accumulated refuse of the inhabitants. While the full extent of the sheet midden has yet to be determined, it appears to cover an area at least 25 X 15 meters. Given this large area and the number of nails that

were recovered from across it, it is likely that several structures were present at the site.

### Looking Forward

There still remains a lot of work to be done on the site, not just for this current project, but beyond that as well. The analysis of the work to date will be completed by summer 2020, and while it will answer many questions, it will also leave many questions unanswered, due to the limited scope of the work that has been completed. Historical documentation

suggests that the site was occupied by Europeans and Africans from 1711 to 1767, dates that are supported by the artifacts that have been recovered. The historical record also provides some insight into some of the people that lived there. For example, the second owner of the Widdicom tract, Lewis John, was known to be an Indian trader who continued his trade despite restrictions on trade between Indians and private citizens following the Yamasee War in 1715 (McDowell 1955:76, 264-265). Samuel Masters, the third owner, was granted the right in 1731 to operate a ferry from his property to Georgetown. In 1732, likely to raise the capital for ferry boats, he mortgaged seemingly all he owned: the 200-acre tract, two slaves, cattle, tar kilns, wood, and barrels (Linder and Thacker 2001:13). What is not documented in the historical record and must be addressed through archaeology is the actual living conditions and day-to-day life of the inhabitants. What style and size of house did they occupy? How many structures are present at the site? What was the economic situation of the inhabitants? Did they have regular access to imported European goods or were they more self-sufficient? Is there evidence that can be tied to specific owners, or to different inhabitants during one ownership? These types of questions and many more can be asked of the site and will require years of work to answer. Additionally, though the work thus far has been targeted towards the colonial occupation, the site contains an abundance of prehistoric materials, and offers the chance to further explore the entire history of human occupation and use of the site.

In closing, work on the Widdicom tract has shown that the site can offer many insights into the colonial occupation of the Georgetown and Winyah Bay region. Through the efforts of the Baruch family in preserving Hobcaw Barony and the continuing stewardship of the Belle W. Baruch Foundation, this site represents something that is increasingly rare along the South Carolina coast—a site that has not been destroyed by development or looting and that remains protected from



such. In the years to come, I hope to be able to report on many more enriching research projects from this important site.

## References

Linder, Suzanne C., and Marta L. Thacker  
2001 *Historical Atlas of the Rice Plantations of Georgetown County and the Santee River*. South Carolina Department of Archives and History, Columbia.

McDowell, William L., Jr. (editor)  
1955 *Journals of the Commissioners of the Indian Trade 1710-1718*. South Carolina Department of Archives and History, Columbia.

Michie, James L.  
1991 *The Search for San Miguel de Gualdape. Research Manuscript Series 1*. Waccamaw Center for Historical and Cultural Studies, Coastal Carolina College, Conway, South Carolina.



Figure 5: Heathley A. Johnson screening soil from a test unit in August 2019. (Photo by Tamara S. Wilson)



Figure 4: Dr. Karen Smith, Stacey Young, and Tamara Wilson excavating a test unit in August 2019. (Photo by Heathley A. Johnson)



# Search for Old St. Augustine

By Chester B. DePratter

I have always had an interest in St. Augustine's early history, because its' history is directly connected to that of Santa Elena on Parris Island. St. Augustine was estab-



Figure 1: Portrait of Pedro Menéndez de Avilés. (Internet)

lished by Pedro Menéndez de Avilés in September 1565, as a military outpost for defense against a French presence at Fort Caroline located at the mouth of the St. John's River near present-day Jacksonville, Florida (Figure 1). Menéndez had been sent by Philip II to dislodge the French from Spanish-claimed *La Florida*, and he was accompanied by several hundred soldiers and sailors. Shortly after fortifying

St. Augustine, Menéndez marched north along inland trails in a major storm to attack Fort Caroline. The French defenders were caught off guard, and the Spanish force achieved an easy victory. In the following weeks, the majority of the French colonists in Florida were "put to the sword" while the survivors fled to France.

With the French threat eliminated, Menéndez strengthened his hastily constructed mainland fortification in St. Augustine. Dr. Kathleen Deagan, emerita Research Curator at the Florida Museum of Natural History, has spent more than 20 years working on that first settlement at what is today the Fountain of Youth Park just north of downtown St. Augustine.

Menéndez traveled north from St. Augustine in March and April 1566, and in about mid-April, he reached present-day Port Royal Sound near Beaufort. He chose a location on the southern tip of Parris Island to serve as his second settlement. This place, Santa Elena, was meant to become the capital of Spanish *La Florida*. After

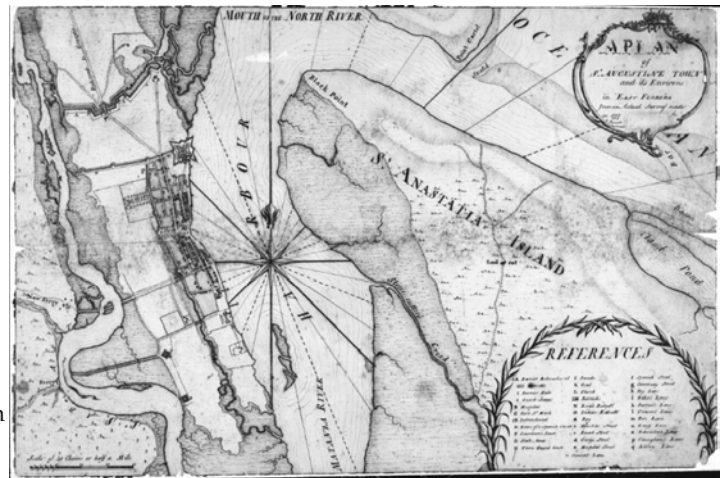


Figure 3: Joseph Purcell map, 1777, showing sand ridge just above words "St. Anastasia Island." (Internet)

building a fort at Santa Elena, Menéndez returned to St. Augustine.

In April 1566, the storehouse in the St. Augustine fort was set on fire by flaming arrows during an Indian attack. Menéndez, in consultation with his chief lieutenants, decided to relocate the community of St. Augustine and its defensive fortifications to Anastasia Island, a predominantly marshy area with limited high ground, across the Matanzas River from the original settlement (Figure 2). By late June 1566, a new, triangular fort had been constructed on Anastasia Island. Contemporary documents provide few details on the location of this new fort. Soon after the fort was completed, soil began to erode from the front side of the fort, and it was partially dismantled and rebuilt very close to the initial location but farther from the "sea." These two forts on Anastasia Island are counted as the second and third forts at St. Augustine.

In June 1566, approximately 1,500 reinforcements arrived at St. Augustine, and they would have been housed on Anastasia Island before they were sent to Santa Elena and other outposts in Florida and the Caribbean. This means that the resident population of St. Augustine on Anastasia Island could have been as high as 2,000 individuals, though once the soldiers were dispersed, there may only have been a few hundred.



Figure 2: View from above St. Augustine east to Matanzas River, Anastasia Island, and Conch Island farthest to the east. (Internet)





Figure 4: Close-up of north end of sand ridge on Joseph Purcell map. (Internet)

The third St. Augustine fort was damaged by fire in 1567, and it was burned again during a 1570 mutiny. Both times it was rebuilt, presumably at the same location. In 1572, the decision was made to relocate the town and fort to the mainland because “the sea had eaten a large part of the island where the fort and town were. The new mainland fort, St. Augustine’s fourth, was built on the bank of the Matanzas river just north of the newly established town.

So just where were the second and third forts on Anastasia Island? As it turns out, historians and archaeologists have speculated about their location, but no one has ever actually looked for these forts.

There are a great number of maps of St. Augustine and its environs with the earliest dating back to Francis Drake’s 1586 attack on the town. Many of these maps are currently available online, so I conducted a quick survey of these maps and what details they contained concerning Anastasia Island and potential locations for the missing forts.

Most of these early maps do not show details of the interior of Anastasia Island and its extensive marshes, but the Joseph Purcell map of 1777 was the exception (Figure 3). That map shows a north-south ridge running through the surrounding marsh that I thought might yield some evidence of St. Augustine’s former location on the island. The map appears to show entrenchments or earth embankments at its north end (Figure 4) and another set

farther to the south (not illustrated here). Part of the northern set may date to the summer of 1740 when Governor James Oglethorpe of Georgia laid siege to St. Augustine, but the more southerly embankment is of unknown origin.

Most of the original landforms and features of Anastasia Island were obscured when a developer, David P. Davis, bought the island for development. In 1925-26, he buried the island’s marshes beneath several feet of dredged fill for his Davis Shores subdivision (Figure 5).

With the preliminary work done, I contacted my friends and colleagues, Dr. J. Michael Francis of the University of South Florida and retired St. Augustine city ar-

chaeologist, Carl Halbirt, and invited them to join me in the search, and they both agreed.

The next step was to organize an expedition to St. Augustine to search for these two missing forts. I procured funding from a group of interested supporters to hire Stacy Young, head of SCIAA’s Applied Research Division, and a crew for two weeks of work in St. Augustine. Because the part of Anastasia Island where we wanted to work was located in Davis Shores subdivision, I sought and received permission from the St. Augustine City Commission to excavate shovel tests in the city right-of-way along residential streets and in Oglethorpe Battery Park (at the location of Oglethorpe’s 1740 artillery battery). I also retained a filmmaker, A. J. “Jamie” Koelker to come along and film the field work.

The St. Augustine field work took place in late March and early April 2019. The crew excavated approximately 75 shovel tests in Oglethorpe Battery Park (Figure 6) and another 180 along residential streets (Figure 7). Many of these tests were excavated to depths of three feet or more in dredged fill, while others were excavated into the sandridge I had seen on Purcell’s 1777 map. Nearly all of those along streets were in manicured lawns, so we were careful in filling our holes and replacing the sod (Figure 8).



Figure 5: View showing 1926 dredge fill operation on entire north end of Anastasia Island. (Internet)





Figure 6: Shovel testing around Oglethorpe monument in Oglethorpe Battery Park. (Photo by Chester B. DePratter)

We found only a few sherds of Spanish and Indian pottery in our excavations, but there were no concentrations of artifacts or evidence of the town or either of the forts. We were able to delineate the ridge shown on the Purcell map, though it is now surrounded by dredge fill pumped onto Anastasia Island in 1926 by Mr. Davis.

We did not solve the mystery of where St. Augustine and its forts were on Anastasia Island between 1566 and 1572. Archaeology is like fishing. Somedays you catch fish, and on other days you do not. Was the project worth the effort and cost? Yes, I believe it was. We ruled out a possible location for the town and forts, and now others can continue the search by looking elsewhere. At this point it seems likely that both the town and its forts have washed into the Atlantic Ocean, but some portion of it could remain along the eastern side of the island.



Figure 8: Location of all excavated shovel tests. Rectangular area at upper left is Oglethorpe Battery Park. (Map by Tamara S. Wilson)



Figure 7: Shovel testing in city right-of-way along North Matanzas Boulevard. (Photo by Chester B. DePratter)

I thank my crew, Stacy Young, Brandy Joy, John Fisher, Lalon Swaney, Evan Walker, and Tamara Wilson. Dr. Charles Cobb and graduate students from the University of Florida came up for a day and donated their time and effort. The project would not have been possible without the support of those who donated funds for the work. Thanks to all!



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EDITED BY ALBERT C. GOODYEAR AND CHRISTOPHER R. MOORE

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# Go Directly to Scholar Commons

By Chester B. DePratter

Are you curious about SCIAA reports and other publications? Do you want to find back issues of *Legacy* to share with friends? Do you wonder about new shipwreck or underwater discoveries in our rivers or offshore off our South Carolina coast?

There is a place you can go to find answers to each of these questions. The University of South Carolina maintains a web based compendium of more than 55,000 pages of SCIAA publications including the *Notebook* (January 1969 to

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Scholar Commons readership comes from around the world. Since 2011, there have been 17,625 downloads of my 37 posted articles and reports. Those download requests have come from the United States and 105 other countries. In just the past month, there have been 209 downloads by individuals in the United States and 14 foreign countries. It seems that there is great national and international interest in the work we do here at SCIAA!

Accessing the SCIAA postings on Scholar Commons is quite simple. Just Google search "Scholar Commons" and select the listing for University of South Carolina, or go there directly at: <https://scholarcommons.sc.edu/>. Once you are on the USC page, select "Research Centers and Institutes," and that will take you to the listing of all SCIAA publications. If you click on "Archaeology and Anthropology, South Carolina Institute of," you will come to our main page where you can search all our publications by individual author, project name, or site.

Going to Scholar Commons may be the perfect solution for those sleepless nights we all experience from time to time. Ramble, learn, have fun. So far as we know, SCIAA-surfing is not addictive, but it is guaranteed to be educational. We want to thank former Archaeological Research Trust (ART) Board Member, Bill Schmidt, and former SCIAA Library Assistant, Keely Lewis, who spent countless hours scanning all of the publications through their association at Thomas Cooper Library at USC. We are very appreciative of Bill Schmidt's commitment to finding every newsletter, research manuscript, and book published by SCIAA archaeologists since 1963. And we thank Keely Lewis for assisting in the immense scanning of all of these 55,000+ pages!

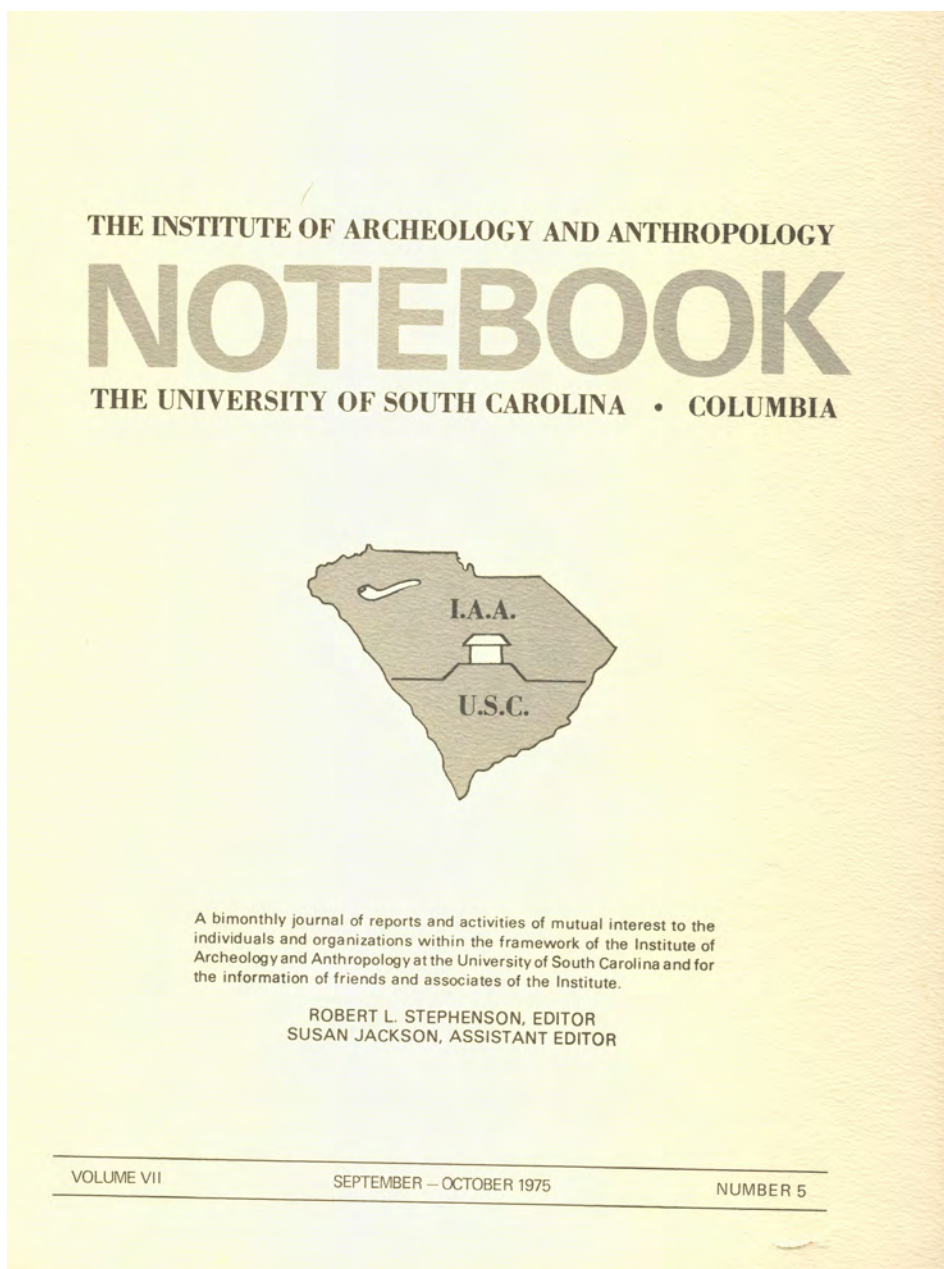


Figure 1: SCIAA *Notebook*, 1975, Vol. 7, No. 5. (Photo by Chester DePratter)

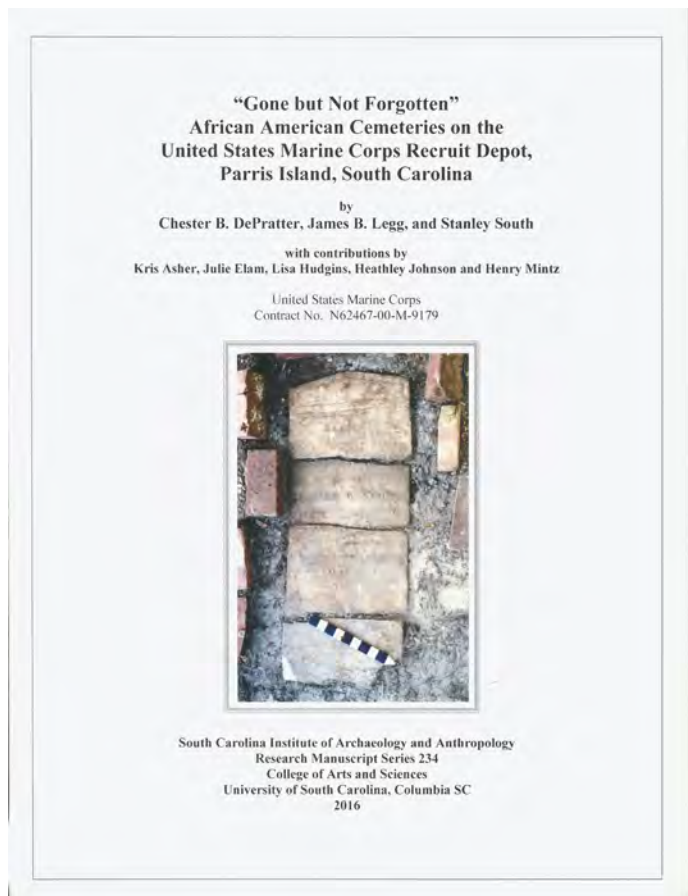


Figure 2: Chester DePratter, et al., 2016, *Gone but Not Forgotten*, SCIAA Research Manuscript Series 234. (Photo by Chester DePratter)

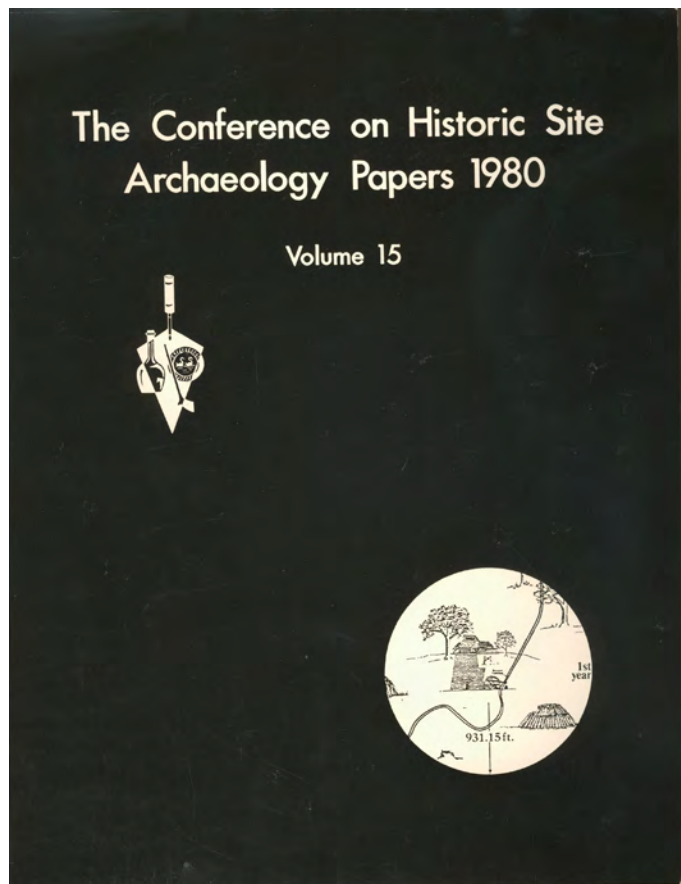


Figure 4: Stanley South, ed., *Conference on Historic Site Archaeology Papers 1980*. (Photo by Chester DePratter)

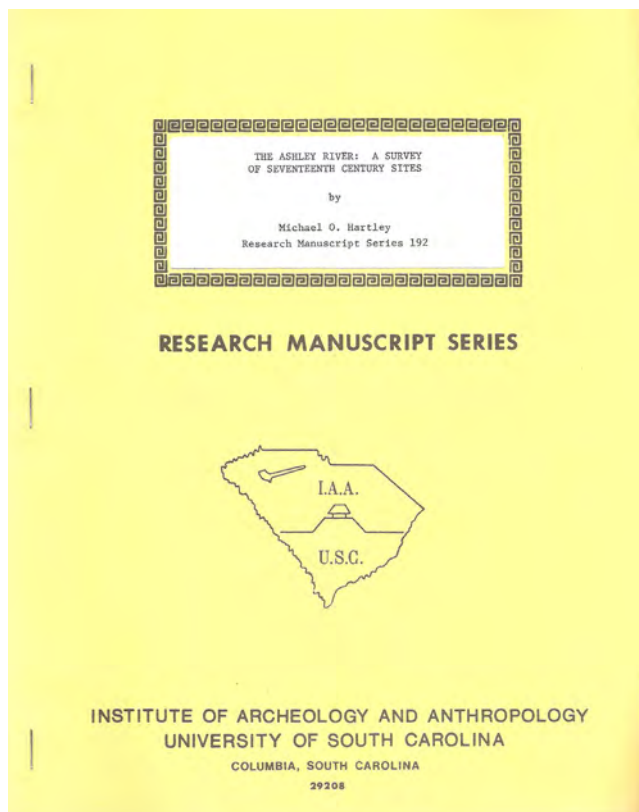


Figure 3: Michael Hartley, 1984, *The Ashley River: A Survey of Seventeenth Century Sites*, SCIAA Research Manuscript Series 192. (Photo by Chester DePratter)



Figure 5: *PastWatch*, Volume Two, Number Two, 1993. (Photo by James B. Legg)



# Cultural Event

## Seventh Annual Arkhaios Cultural Heritage and Archaeology Film Festival

By Dr. Joanna Casey, Professor Department of Anthropology, University of South Carolina

The Seventh Annual Arkhaios Cultural Heritage and Archaeology Film Festival took place in Columbia, South Carolina on October 10-13, 2019. The Festival is organized by Jean Guilleux, Director and Founder of Arkhaios who formerly organized and hosted the festival in Hilton Head Island, SC. Over the past few years, he has organized it long-distance from Pittsburgh with the help of local volunteers. The Columbia iteration of the festival has undergone some growing pains as various venues and schedules were experimented with, but this year's festival was a winning combination of venues and time slots. 2019 was a rather eclectic mix with more films on cultural heritage than archaeology, and fewer films than in previous years, but the films in general were much longer. Although Jean Guilleux is committed to showcasing films from and about South Carolina heritage, this year there was only one local film, *The Planter at the Gate* (Directed by Jamie

and Chris Koelker) about the Battle of Secessionville.

The Festival kicked off with a Thursday evening screening of underwater archaeology films at the Richland County Public Library-Main. The underwater archaeology track is a new one for Arkhaios. The films were introduced by James Spirek the South Carolina State Underwater Archaeologist who not only gave context to the films we saw, but to the enterprise of underwater archaeology as a whole. The first film, *The Lions of Lissa* (Directed by Nicolo Bongiorno, an Italy / Croatian co-production) could not have been a better choice for the first film of the festival. Making its American debut, this poetic and hypnotic film is loosely about a battle between ironclad warships that took place on the Mediterranean island of Lissa in 1886. In truth, the film is more about how the sea transcends boundaries, creating communities of shared culture and language along its coasts and in the

ships that ply them. Separation is less about horizontal geography than it is a matter of air and water. Things that sink are gone forever, and even now it is only certain people who can enter the "sacred twilight" of the deep. Unsurprisingly, *The Lions of Lissa* took the prize for the best underwater archaeology film. (See Pages 18-19) on the article on the underwater track of the film festival by James Spirek.)

The Arkhaios Grand Prize and the Audience Favorite Film Award went to *Eating Up Easter* (Directed by Sergio Rapu, a USA / Easter Island production). This was the first film of Friday's screening, hosted by the Greater Piedmont Chapter of the Explorer's Club at the very pleasant venue of Senate's End. *Eating Up Easter* is a sympathetic exploration of tourism and globalization on Easter Island from the perspective of its indigenous peoples. The film starts with a discussion of garbage, which arrives daily on the island but has no way to get off, and this becomes something of a central metaphor for the film. Rapa Nuians are not yearning for a fictitious Edenic past but are trying against enormous odds to build a sustainable future of their own choosing that participates in the global community without being overwhelmed by it. The story comes alive through its local characters, starting with Mama Piro to whom the film is dedicated. We meet her the first time at the recycling center where she works, dressed in old clothes and talking smack to Sergio Rapu who is trying to interview her. As with all characters in this film, she is not at all what she initially seems. *Eating Up Easter* is a funny, sweet, and thought-provoking study of a small island with an outsized reputation. Significantly, the famous Moai have only a minor role in the film.



Figure 1: Stalagmite structures associated with Neanderthals in the depth of Bruniquel Cave in southwest France. (Courtesy Arkhaios)



Figure 2: Actress Eunice Olsen telling the story of *Becoming Singapore*. (Photo courtesy of Arkhaïos)

There was a great deal of buzz about the American Premiere of the film *Neanderthal, the Mystery of Bruniquel Cave* (Directed by Luc-Henri Fage, France), which won for Best Archaeology Film (Figure 1). The film follows archaeologists as they reinvestigate structures made of stalagmites in the depths of a cave in southwest France. The application of new archaeological methods reveals that these structures are associated with Neanderthals, and a number of interesting facts about what they did there. The film was followed by an interview with director Luc-Henri Fage conducted by Dr. Karl Heider. Apparently, as we were screening his film at Arkhaïos, it was simultaneously being rebroadcast on the television channel Arte-France where it is very popular.

The best Cultural Heritage Film award was a tie. *Becoming Singapore* (Directed by Tom St. John Gray, Singapore) (Figure 2) tells the story of Singapore's history through archaeology, history, and the personal story of Eunice Olsen, former Miss Singapore and a well-known Singaporean TV personality. *Versailles Rediscovered* (Directed by Marc Jampolsky, France) (Figure 3) is about the reconstruction of parts of Louis XIV's palace and gardens using archival materials, plans, and 3-D imaging. While most of us know about the size and expense of the palace, this film highlights the kinds of details that might be overlooked in the presence of so much, such as the elaborate water management

systems that ran the fountains, the bird songs piped into the gardens, and the humor and commentary injected into elaborate sculptures. *Versailles Rediscovered* also won a special mention for Discovery of Past Cultures Gained from Archaeological Research. An honorable mention in this category went to *ArtQuake* (Directed by Andrea Calderone, Italy), which was shown here for the first time outside of Italy. This beautiful film looks at what happens to artworks, including architectural works of art when they are subjected to Italy's frequent earthquakes. The film is most interested in how people live with art in the churches and buildings that have been around for centuries, and the importance of restoring art to its proper place within their lives after a disaster has taken place. It also looks at the serendipity of forgotten art being

revealed through earthquake damage, and the surreal experiences of restoration such as of putting together a smashed Giotto fresco like a giant jigsaw puzzle. Art that has nearly been lost takes on new symbolic meanings, and new art is created in the wake of disaster.

Two films received special mention for Depiction of Cultural Change. *Foundations* (Directed by Olivier D. Asselin, Canada) (Figure 4) is about Mathieu Collette who is working to preserve knowledge of traditional blacksmithing through a school at his forge. The film chronicles his struggles to keep the forge open. Collette is pragmatic about traditional knowledge—it is important to preserve it because it produces a better product. There are ample reminders throughout the film about the compromises we make daily in order to have things cheap and fast. *The Gesture and the Material* (Directed by Beatrice Mohr, Switzerland) (Figure 5) is also a meditation on traditional knowledge, but in this film, we have a potter, Pierre-Alain Capt, who makes faithful reproductions of ceramics from the time of the Gauls and the Romans. He does not make pots that merely resemble the originals, but he studies their techniques of manufacture, digs clays, and collects fuel from their same sources and seeks to thoroughly understand how pottery was made in its original environmental and social context.

In previous years, we have seen a number of films by the French Director Agnes Molia for the TV channel ARTE

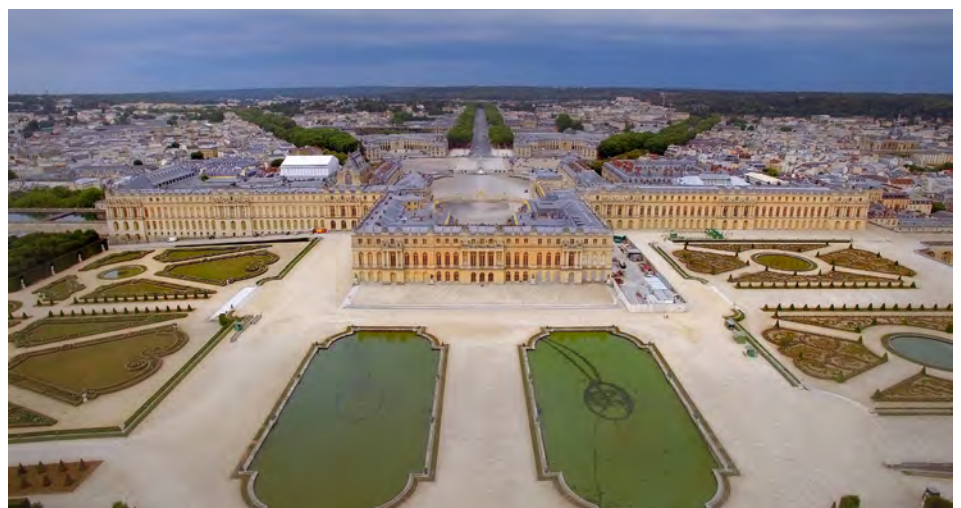


Figure 3: *Versailles Rediscovered*. (Photo courtesy of Arkhaïos)



France. This year there were two short films from the series ArKeo: *Titicaca*, *The Sea of the Tiwanaku* and *Pachacamac*, *The Lourdes of the Pre-Columbian Era*. These were both beautifully shot films with lots of juicy archaeology, hosted by Peter Eeckhout. In *Titicaca*, Eeckhout visits Christophe Delaere who is undertaking underwater archaeology, and in *Pachacamac* he shows his own work at this spectacular Peruvian site. Eeckhout, a pleasant, if low key host in *Titicaca* and other films in the series, fairly leaps off the screen with infectious enthusiasm in *Pachacamac*. Although marred somewhat by the narration and dubbing, *Titicaca* received an honorable mention in the Underwater Archaeology category.

The screening committee and the audience were split on whether they loved or hated *The Origins of Music* (Directed by Andrea Spalletti and Daniel B. Arvizu, Spain). It is a beautifully made film with amazing cinematography and animation, but its heavy-handed behavioral evolutionary approach was problematic for some.

### **Thank you to Arkhaio Donors, Volunteers, Screening Committee Members, and the Jury**

Ernest L. Helms, III MD, Nena Powell Rice, Dale Boozer, The Greater Piedmont Chapter of The Explorers Club, Chistina H. Myers, James Borton, Sam and Gina



Figure 5: Potter, Pierre-Alain Capt demonstrates techniques of manufacture of pots produced during the time of the Gauls and Romans featured in the film, *The Gesture and the Material*. (Photo courtesy of Arkhaio)

McCuen, Bill Bridges, COSCAPA, the Archaeological Society of South Carolina, Carolyn Hudson, Jan Ciegler, Jane Barnhill, Neal and Cathy Konstantin, Larry Reed, Karl and Bea Thomas, Allegheny Chapter #1-Society of Pennsylvania Archaeology, Steven Folks, Jury President, Filmmaker, Executive Producer and Project Manager at South Carolina ETV in Columbia, South Carolina; Dr. Robert Clift, Documentary filmmaker and media studies scholar, Assistant Professor at

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Figure 4: Illustration of historic forge in the film, *Foundations*. (Photo courtesy of Arkhaio)



# A Tribute to Anthony “Tony” Caldwell Harper

By Tommy Charles

It is with great sadness that we say Farewell to a very dear friend of the SC Institute of Archaeology and Anthropology (SCIAA) and to statewide, national, and international archaeology preservation! Those of us fortunate enough to have known Anthony “Tony” Harper well know that we have lost a great friend, a scholar, and an outstanding human being. Anthony Caldwell Harper passed away on Monday, September 23, 2019 at age 83 after a yearlong battle with kidney cancer. He was born on January 5, 1936 in Greenville, SC to Herbert Caldwell and Elizabeth Stone Harper. After graduation from the University of Georgia, he joined Caldwell in the family business, Harper Brothers Office Supply and Furniture, which would eventually become Timberland Capital Investments, with numerous real estate holdings in downtown Greenville and elsewhere. Tony assumed leadership of the business in the 1990’s, and has been an active figure in Greenville’s growth and particularly the revival of the West End Business District.

Along with his involvement with his business, Tony had an immense interest in the history of our Nation and particularly that of the Native American people

of South Carolina. His contributions in pursuit of better understanding their way of life were both moral and monetary; as a charter member of the Archaeological Research Trust (ART), he participated in and assisted with funding of several archaeological research projects throughout South Carolina from the Mountains to the Sea, including the Topper site in Allendale County, underwater investigations in lowcountry rivers, and numerous Piedmont sites.

I first met Tony about 1968, when collecting Native American “arrowheads” from a site in Newberry County, South Carolina. Seeing another person about a hundred yards away who was occasionally bending over to examine something on the ground, I knew immediately what he was doing, and he obviously knew what I was doing. It was only natural that curiosity drew us toward each other to see what each had found. Meeting at a wire fence that separated the field, we introduced ourselves, thus began a friendship that lasted until his death 51 years later. Tony’s interest in the history of our Nation, and particularly that of South Carolina, was immense; I could write a book about his many contributions, both morally and

financially for research projects seeking to better understand our state’s forgotten and unknown history. He was a charter board member of the USC Educational Foundation Archaeological Research Trust (ART) that was created November 14, 1991, to raise funds for SCIAA archaeological research. He assisted with creating the Piedmont Archaeological Studies Trust (PAST), a non-profit formed to expand research across his beloved South Carolina Piedmont and mountains.

To my knowledge, his last endeavor toward sharing our state’s hidden history with its present and future citizens was his tremendous support toward completion of the Laurens County Museum. Tony wished to fulfill the dream of the Late Russell Burns that the museum ultimately become a major research and teaching center for the South Carolina upstate. His contributions toward achieving that goal are exemplary, and I hope the museum’s future success will serve as a fitting memorial to both Tony Harper and the late Russell Burns. Tony’s time on this earth was well spent, his positive “can do” attitude served to motivate those around him. He will be greatly missed.



Tony at his home in Greenville, SC. (Photo by Tommy Charles)



Tony at his mountain house in North Carolina. (Photo by Tommy Charles)



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