

Sport Diver Archaeology Management Program

Maritime Research Division
South Carolina Institute of Archaeology and Anthropology
University of South Carolina

Quarterly Reporter

“Helping to preserve and protect South Carolina’s maritime heritage through research, education, and public outreach.”

July 2013

Volume 4, Issue 2

Things You Need to Know:

- 2013 Quarter 2 Reports Due by July 10, 2013
- Wing Night July 31, 2013
- SDAMP office closed August 5-16, 2013
- Artifact Identification Workshop August 31, 2013
- Carl’s Retirement Party September 11, 2013

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2013 Field Training Course Part I

By SDAMP

We are always excited for the summer months when our education programs really kick off. One of the highlights each year is our Field Training Course (FTC). This course is intended to introduce divers to the science behind underwater archaeology. It is not about roaming the bottom or a site and collecting artifacts. Underwater archaeology involves a number of scientific disciplines to accurately observe and record an underwater site.

This year, we were joined by five divers who were interested in learning the scientific practices involved in mapping underwater sites; be they shipwrecks or artifact

scatters. Students ranged from an army engineer to a high school senior and they each did an incredible job.

The weekend course began in the classroom where students heard lectures about common sites in South Carolina as well as basic theory regarding archaeological site mapping. They spent that afternoon practicing those skills on a mock shipwreck site set up on the grounds of the DNR Marine Resource Center in Charleston. On Sunday, the students, instructors, and a few fire fighters met at a Mt. Pleasant Fire Department training pond to practice recording underwater. Thank you to Greg Kent for arranging the use of this great facility

and to volunteers Bruce Orr and Nate Fulmer who helped us set up the site for the students.

This new location for the course posed a couple of setbacks (low to zero visibility due to silt and “gunk”), but certainly gave the students real-world experience that is invaluable. Despite the lack of visibility, the students did an excellent job of navigating the site and mapping the mock shipwreck. We all learned a lot and had a great time in the process.

We are extremely proud of all of our 2013 FTC grads and can’t wait to include them in future classes and projects. Well done! ■



Left (L to R): Dakotah Merck, Thomas Weinheimer, Elizabeth Herring, Ari Mejia, Alex Frank

Below: FTC students at the Mt. Pleasant Fire Department training pond (Image courtesy of Bruce Orr)



January Quarterly Reports

This is a reminder that your 2nd quarter 2013 reports are due by July 10, 2013. These reports should cover all of the collecting you have done between April 1st and June 30th of 2013.

versions of the forms. We will no longer be accepting outdated versions.

Curator of Natural History
301 Gervais St.
Columbia, SC 29201

Artifact Reports

Your *artifact* reports should be filed online or may be sent to:

Artifact Report Forms
PO Box 12448
Charleston, SC 29422

You may also fax forms to: (843) 762-5831
Email forms to us at: sdamp@sc.edu

Fossil Reports

Your *fossil* report forms should be emailed to Dave Cicimurri at: dave.cicimurri@scmuseum.org

Or mailed to:

Make sure that you file reports with both agencies even if you have not done any collecting. If you have not done any collecting, just tick the box that reads “No Recoveries Made This Quarter” and send it to the appropriate agency.

If you have any questions regarding reports, please visit our website at: artsandsciences.sc.edu/scia/mrd/sdamp_hdl_forms.html

Or give us a call at: (843) 762-6105. ■

Please file your artifact reports using our online system. You can submit forms online at: src6.cas.sc.edu/sdamp (Note: If this is the first time you are filing on this system, you will need to activate your account by following the directions on the home page).

All report forms can be found on our website at: artsandsciences.sc.edu/scia/mrd/sdamp_hdl_forms.html

Please use the newest



Quarterly Reports due by April 10, 2013

The Archaeology Society of South Carolina

By ASSC & SDAMP

The Archaeological Society of South Carolina, Inc. (ASSC) is an association of professional and avocational archaeologists and concerned citizens uniting in a cooperative effort to understand the prehistory and history of

South Carolina. It is a society of dedicated members exerting their combined efforts toward the interpretation and preservation of South Carolina's rich cultural heritage

The Maritime Research Division (MRD) is a proud supporter of the Archaeology Society of South Carolina. Each year MRD participates in the annual conference and Fall Field Day, both highlighting the great work conducted by professional and avocational archaeologists in the state.

The 2013 Fall Field Day will be held at Santee State Park on September 21st. You do not want to miss this opportunity to experience public archaeology first-hand!

We hope you will consider joining this great organization in helping to protect and preserve SC cultural heritage. ASSC is a great way to get involved in the archaeology around the state.

ASSC members are entitled to receive ASSC publications, which include the quarterly newsletter *Features & Profiles*, that

contains information about the society and events; and *South Carolina Antiquities*, a scholarly journal published annually containing articles about South Carolina archaeology and adjacent areas. *South Carolina Antiquities* volumes 1-44 are now available for download online. Be sure to check out some fantastic articles about SC archaeology in these volumes!

For more information on how to become a member with ASSC, visit www.assc.net ■



Upcoming Events

FTC Part II

The SDAMP office will be closed July 17-22 as we are away teaching the Field Training Course Part II. We will be joined by 4 students who will be excavating and recording a beached wreck on Hilton Head Island. This is a continuation of our 2012 FTC project.

Wing Night

July Wing Night will be on the 31st from 6:30-9:00pm at Kickin' Chicken on Folly Rd. Please feel free to bring family, friends, and finds!

Black River Project

SDAMP will be conducting a two-week project on the Black River and in Black Mingo Creek the first two weeks of August. We will be conducting remote sensing operations for wrecks reported to us by Hobby Divers and mapping two possible ferryboats associated with Brown's Ferry. This is a volunteer based project and we will need lots of hands. If you are interested in volunteering, please email Ashley Deming at deming@sc.edu.

Black River Project Presentation

At a date TBD in August or early September, we will be presenting about the Black River Project and our findings in Georgetown. Please follow us for more information regarding this public presentation.

Artifact Identification Workshop

We will be holding an Artifact Workshop August 31st in Columbia. Please see page 4 for details.

Carl Naylor's Retirement

We are throwing a Wing

Night/Carl's

Retirement party September 11, 2013 at the British Bulldog Pub in Columbia from 6:30-9:00pm. Please come out and celebrate Carl's many years with us!

Please continue to read the *Quarterly Reporter*, emails, our website, and follow us on [Facebook](#) for information about upcoming events and volunteering opportunities.■

SDAMP News

It is important to us that our Hobby Divers are aware of the education and outreach we do throughout the year. We hope to keep you updated on all that we are involved in so that you too will get involved.

Remember that SDAMP is on [Facebook](#)! Leave a message on our wall!

April

- MRD conducted remote sensing research looking for the *USS Gallatin* in Charleston Harbor.
- MRD was recertified for First Aid/CPR and O2. Thanks Charleston CPR!
- Wing Night was held at Kickin' Chicken on James Island on April 24th.

May

- SDAMP conducted remote sensing operations outside of Yemassee, SC in preparation for the Combahee River Project

which took place in June.

- Ashley Deming presented about SDAMP's education and outreach at the annual North American Society for Oceanic History Conference at Thunder Bay National Marine Sanctuary in Alpena, MI.
- Ashley Deming presented about the Hilton Head Island shipwreck project to the Hilton Head Chapter of ASSC May 21st.
- Columbia Wing Night was held May 29th and was attended by approximately 40 people.

June

- SDAMP partnered with Hampton Plantation State Historic Site, the Charleston Museum, and the College of Charleston (CofC) to conduct side scan sonar operations June 4-6 on Hampton Creek as part of the CofC archaeology field school. See more about this project

on pages 5-7. Thanks to volunteers Bruce Orr and Nate Fulmer.

- The Combahee River Project was conducted June 10-14 by MRD and SCIAA's Chester DePratter. The team was looking for ceramics in the water as evidence of a 17th century Yamassee village. See page 7-9 for more information. Thanks to volunteers Bruce Orr, Ted Churchill, Dennis Coco, and Jim Hickman.
- Ashley Deming teamed up with Andrew Agha of Charles Towne Landing to film a video for Montessori schools about the importance of teaching hands-on archaeology.
- SDAMP taught the FTC Part I to 5 students June 22-23. See page 1 for details.
- Wing Night was held at Kickin' Chicken on James Island on June 26th for 11

people.

Upcoming...

July

- SDAMP office closed July 17-22 for the FTC Part II.
- Charleston Wing Night will be on July 31st from 6:30-9:00pm at Kickin' Chicken on James Island.

August

- SDAMP office will be closed August 5-16 for the Black River Project.
- Charleston Wing Night will be held on August 28th.
- SDAMP's Artifact Identification Workshop will be held in Columbia August 31st. See page 4 for details.

September

- MRD will be hosting a retirement party for Carl Naylor September 11th in Columbia. See page 9 for details.
- ASSC Fall Field Day will be held at Santee State Park September 21st.■

August Artifact Identification Workshop

Each year SDAMP offers two Artifact Identification Workshops to the public as part of their education and outreach initiatives. These one-day workshops are aimed at the sport diver community, but are appropriate for anyone interested in learning more about South Carolina artifacts. The workshop focuses on how to identify and date artifacts using a diagnostic approach to field identification. This is something that everyone can do. With some simple descriptions, artifacts can be identified in a manner useful to both hobby collectors and archaeologists. This workshop is designed to help collectors better understand and identify artifacts so that they can appreciate their collections even more from an archaeological and historical context, but also to report finds more accurately to archaeologists and researchers.

The workshop features a mixture of lectures and

activities designed to help identify some of the types of artifacts found in South Carolina. SDAMP staff gives lectures and lead hands-on sessions about bottles, historic ceramics, Native American pottery and projectile points, and other historic cultural material. Workshop students have the opportunity to get real, practical experience in identifying and understanding a variety of cultural materials.

Workshops are open to a maximum of 15 students to ensure that each student has the opportunity to work one-on-one with instructors and get the most out of the day. The workshops are highly interactive and students work in groups to identify the archaeological material during the hands-on sessions.

SDAMP will be offering a workshop Saturday, August 31, 2013 in Columbia, SC. The cost for the workshop is \$35 per person and includes an

identification guide handbook.

SDAMP Artifact Identification Workshop

Date: August 31, 2013

Time: 9am-5pm

Location: Columbia, SC

Cost: \$35 (make checks payable to USC)

Send fee to:

Artifact Workshop

PO Box 12448

Charleston, SC 29422

Workshop fees may be paid using the following

methods: cash, check, or money order. Before you can be on the official list, payment must be received. The deadline for fees is August 23, 2013. This is always a fun day and you will learn a lot. We look forward to having you join us!

To sign up and for more information, please email SDAMP at sdamp@sc.edu or call 843-762-6105. ■



Artifact Identification Workshop students (left to right) George Shepard, Steve Noga, and Ben Miller

Hobby Diver of the Quarter

This section of the newsletter is devoted to the hobby diver(s) who go above and beyond the call of duty. He/she has submitted excellent reports, been an exceptional volunteer, has gone out of their way to preserve cultural and/or natural heritage in the state, or has

been a general inspiration to other licensees, the public, or us.

Each quarter we will pick a licensee that resembles one or more of these noteworthy traits. Hopefully, it will be you! If you know of someone who fits some or all of these categories and would like to

nominate them, please send us a brief email of who and why you think they should be Hobby Diver of the Quarter.

The honor of Hobby Diver of the Quarter for Quarter 2 2013 goes to diver Nate Fulmer (#5207).

Nate is a graduate of College of Charleston's

Anthropology Program and has always been interested in archaeology. We met Nate at the 2011 Charles Towne Landing Archaeology Conference where he agreed to help us liaise with the CofC Archaeology Club. Nate was a real force for us with

(Continued on page 5)

Hobby Diver (Continued from page 4)

CofC and even organized a SDAMP Artifact Identification Workshop for CofC students and faculty.

Nate has supported us at ASSC Fall Field Day, Wing Nights, our annual oyster roasts, as well as by getting involved with our

2012 Field Training Course Part I as a student.

In 2013, Nate has already volunteered with us on a few projects. He helped us with both the Hampton Plantation Project (read his story on page 6) and the 2013 Field Training Course Part I.

We are looking forward to having him volunteer with us on our upcoming Black River Project in August.

Thank you, Nate! You are truly an inspiration to us all! ■

Hobby Diver of the Quarter Nate Fulmer



Hampton Plantation Project

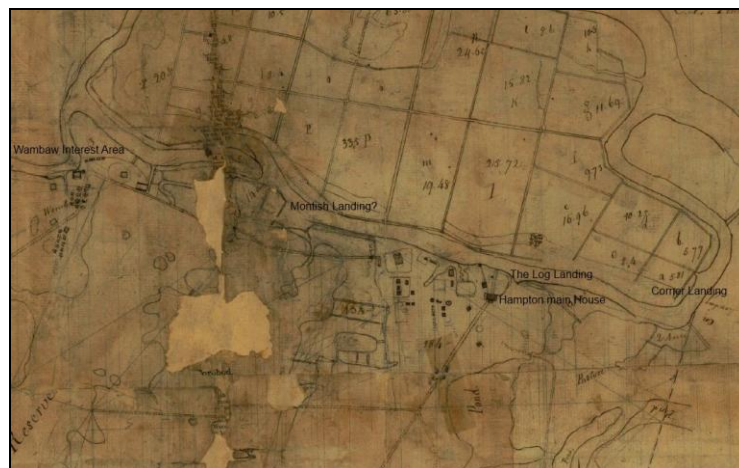
By Ashley Deming

From June 4-6, SDAMP collaborated with Hampton Plantation State Historic Site, the Charleston Museum, and the College of Charleston (CofC) for the 2013 archaeology field school. We were to conduct side scan sonar of Hampton Creek and in Wambaw Creek to look for evidence of historic landing sites as well as other maritime activity associated with an early African slave settlement (based on an 1809 plat and information provided by Hampton archaeologists).

Additionally, our role was to introduce CofC students

to various aspects of maritime archaeology.

On the first day, the SDAMP crew along with volunteers Mike Slot and Nate Fulmer hopped in our johnboat and headed out to Hampton. We had a small run in with a sandbar, but we were back on our way in no time thanks to our two great volunteers. We made it to Hampton where we met up with the CofC students to brief them about our project. With 4-5 students at a time, we took them on a tour of Hampton Creek to introduce them to the process of side scan sonar.



1809 plat of Hampton Creek with historic landings (Image courtesy of SC Department of Parks, Recreation and Tourism)

Each student had a chance to analyze the images on the monitor and try to determine if what they were seeing was evidence of a landing or just fallen trees.

After the tours, the SDAMP team got to work surveying the whole creek from the entrance to Wambaw Creek to the South Santee. Once the survey was completed, we all headed back to home base in Charleston where we were met by volunteer Bruce Orr who joined us for post processing.

We were able to input all of our data into Google Earth using side scan

mosaic software. This made it easy to look at our data.

We discovered that there was evidence of landings at each marked location as well as a possible shipwreck. This was exciting! We wrapped up about 10pm by planning our dive targets for the following two days.

Unfortunately, we were unable to dive as we were thwarted by Tropical Storm Andrea. We plan to return to Hampton in 2014 to complete our diving survey. Read about Bruce Orr's and Nate Fulmer's volunteer experiences on this project in the following pages. ■



Ashley Deming showing CofC students side scan sonar survey operations on Hampton Creek

Feature Hobby Diver Article

Each quarter we would love to feature one or two articles by you, the hobby diver. Your article can be about an artifact or fossil you found, your collection, your research, your experience with the program, a humorous diving anecdote, or just something interesting that

relates to South Carolina's past. Feel free to include images that can be used with your article.

You should submit your articles to SDAMP for review and editing. Once we have approved your article, we will do our best to get it into the next issue of the *Quarterly Reporter*. If

your article is accepted, we will contact you to let you know.

We want to hear from you, so get writing! Submit your articles to: sdamp@sc.edu ■



**2012 Allendale Dredgeheads
(L to R) Dennis Coco, Jim Hickman, Carrie Miller, Ted Churchill, and Joe Beatty**

Staying Positive in the South Santee

By Nate Fulmer, Hobby Diver #5207

Hall of Famer Ted Williams once said, "If you fail only seven times out of ten attempts at bat, you will be one of the greatest in the game." I believe a similar concept applies to many things in life, underwater archaeology included.

I first learned of the SDAMP program as I read Carl Naylor's memoir, [The Day the Johnboat Went Up the Mountain](#). Since obtaining my Hobby Diver license in 2010 while an undergrad anthropology major at the College of Charleston, I've enjoyed participating in SDAMP-sponsored programs with Carl and Ashley Deming and this year has proved no exception.

For three days in early June, Ashley invited me to join her and Carl along with SDAMP volunteers Mike

Slot and Bruce Orr as we attempted to survey the creeks adjacent to Hampton Plantation State Historic Site near McClellanville. The basic plan was to side scan on day one and return to dive any promising targets on days two and three. On day one, we spent the morning demonstrating remote sensing for groups of College of Charleston students from the 2013 Archaeology Field School as we gathered some great data that allowed us to identify a number of sites for further investigation.

Thanks to deteriorating weather conditions as Tropical Storm Andrea churned our direction on day two, followed by an equally-frustrating series of equipment misfortunes on day three, diving did not

occur... unless we count the time Bruce and I geared up at a washed-out ramp in an attempt to free the SCIAA pontoon trailer. Brute force proved to be fruitless in this endeavor, but I did manage to break a tooth biting too hard on my regulator as Bruce and I strained to lift the trailer out of the muck. We eventually managed to free it with relative ease by repositioning the pivoting jack near the back of the

trailer. Unfortunately, with much of the day gone and Andrea continuing her approach, we had little choice but to return to Charleston. Such is the nature of field projects.

Despite the loss of two out of three days on the project, I still consider the .333 average a success because of the great side scan data gathered on the first day. Next time, perhaps we'll bat .500. The trick is to not give up. ■



Ashley Deming and Nate Fulmer staying positive

The Rutledge Curse

By Bruce Orr, Hobby Diver #5246

On a stormy night on March 30, 1830, a lovesick and depressed John Henry Rutledge took his life at Hampton Plantation in McClellanville. He was

buried not too far from the house but it is said that his ghost still plagues the house.

Perhaps it was the ghost of John Henry

Rutledge that also plagued the SDAMP project.

The dive portion of the project was set to begin June 5. Much like the storm in 1830, Tropical Storm

Andrea made her approach known. We spent the morning in our vehicles waiting out the storm. Rain is okay for a diver but once

(Continued on page 7)

Rutledge Curse (Continued from page 6)



Hampton Plantation

the lightning set in Ashley made the safe call and the mission was scrubbed for the day.

June 6 looked promising. A brief window of clarity made us hopeful. The pontoon was launched and then the ghost of John Henry Rutledge (at least we will claim that) set upon us.

The trailer slipped off the boat ramp and became wedged against it. The ensuing effort to free the trailer resulted in at least one dive for the day for the volunteers! All while being

attacked by a swarm of horseflies that were so determined, they were still clinging on when dunked underwater. You cannot fool a horsefly. They always can recognize a horse's...posterior.

After the morning was "washed out," (pun intended) and the trailer recovered, we set out to meet up with the College of Charleston archaeology students to discuss our endeavors. The now possessed trailer decided to have a flat en route.

Fortunately, for us, our illustrious leader Ashley turned green and lifted the trailer with superhuman strength while we changed the tire. Don't make her angry. You won't like her when she is angry.

After repairing the tire, we spoke with the students about what we found during the post processing of the side scan data. Following the debrief, we intrepid volunteers

searched the grounds for evidence of the original landing, but only discovered a sunbathing Water Moccasin. Great dance moves Nate!

Not the outcome we expected as far as the dive aspect, but we do have some excellent sites to explore at another time with SDAMP thanks to side scan sonar. We also have a few more stories to tell. ■



Hampton Project Volunteers Nate Fulmer (left) and Bruce Orr (right)

Observations on a Black Water Dive Adventure

By Dr. Chester B. DePratter, SCIAA Research Division

Ashley asked me to write this article after we spent a week working with the rest of the SCIAA Maritime Division team on an underwater river site. I am not a diver, so this article will reflect the perspective of a land archaeologist

based on a week of observation.

So what did I learn during my week on the river? The first thing I learned is that people who dive in black water rivers must be at least half-crazy. How else could they step

into water so thick with tannin that dive lights barely penetrate the murk? Even sunlight is not visible beyond ten feet beneath the surface. Throw in submerged trees, a bottom littered with broken bottles, the threat of nearby gators, and a strong current, and you have a mix that only a select few would face. Did I already say half-crazy?

Despite these seemingly overwhelming obstacles, the SCIAA divers and the volunteers who assisted them worked day after day to recover the Native American pottery that was the focus of our

project. The pottery we were seeking was made by the Yamasee Indians in the late 17th century, and because of my long-term interest in the Yamasee, I recruited the assistance of the SCIAA Maritime Research Division. When the divers brought up glass or European ceramics, those materials were examined and then returned back into the river. Indian pottery only!

I am not sure just how the divers were able to find the dark brown to black pottery sherds in the murky water, but in the end they

(Continued on page 8)



Chester DePratter and Ashley Deming reviewing pottery finds

Dive Adventure (Continued from page 7)

were able to retrieve a sizable collection of the Yamasee pottery I wanted. It seems that the focused beam from a dive light and groping in the muck was the combination that worked best.

Adventure? Sure, there was plenty of that too. One diver, riding the current, grabbed a sherd off the bottom and, in an effort to slow himself, tried to dig it into the marl to halt his progress downstream; we pulled him back in on the safety line with the single sherd as his glorious trophy. On our final dive, we had two divers in the water. Not long after the divers went down, three nearby (to me they seemed nearby!) male gators simultaneously bellowed intimidations at their competitors. None of the divers on the boat showed any sign of concern (I guess

they're used to that sort of thing!), and the divers remained in the water. I was glad that I was on the boat and not beneath the water.

The main thing I learned from this project is that record keeping is just

as important in diving as it is on the land. In 1975, SCIAA spent a week on the same site that we recently worked, but all the records from that work have been misplaced. This meant that the 1975 work had to be pieced together from

photographs and cryptic notes in the artifact catalog. I now believe that we have figured out most of the details from that earlier work, but having those earlier records would have made the task easier.

Every artifact collected by divers and those working on the land has the potential to contribute to some major research project. Those artifacts are the tangible record of our state's amazing history. I encourage each of you to keep your collections separate by site, to keep records concerning where you were diving and the conditions you encountered, and to share those collections with archaeologists like me who are dependent on your knowledge and materials as we try to reconstruct South Carolina's past. ■



Ashley Deming discusses her underwater observations and Yamasee Indian pottery finds with Chester DePratter

A Good Day on the Combahee

By Jim Hickman, Hobby Diver #5452

A couple of weeks ago, I volunteered to help SDAMP with their Combahee River Project. We were staying at DNR's Research facility on Bennett Point and diving in the Combahee River outside Yemassee, SC. When I got there, I meet up with Ashley, Carl and Joe who introduced me to the project leaders Jim Spirek and Chester DePratter. Jim and Chester showed me a video and told me what I would be looking for. They also informed me that the

artifacts were Yamasee Indian pottery. Who in the heck were these Yamasee Indians? Seems like they came to South Carolina from Georgia around 1687, after meeting the Spanish, and settled on the Ashepoo and Combahee Rivers.

The next morning we got up with the sun, ate, packed up and started out on our great adventure. After a very long drive, we arrived at our dive location where we loaded up on the boat. After a short ride downstream, we anchored.

Jim got in the water first to set a buoy on the pottery beds. After waiting a short time, I jumped in. It got very dark when I got underwater. On the bottom, all I could see was a small space right in front of me where the light was shining. At first, I could not find anything. The bottom was flat and hard. In a few minutes, I ran across a gravel bed and then I started finding some pottery. I spent the next hour scanning the gravel beds and around trees for

pottery. My air was starting to run low so I decided it was time to come up, I pushed off the bottom in hopes that I was going up. In a few seconds, I saw the redness of the surface. Back on the boat Chester and Ashley were going through the goodie bag like two kids in a candy store; the good stuff (artifacts representing what the archaeologists were looking for) was put a plastic bag and the rest of it was returned to the bottom.

(Continued on page 9)

A Good Day (Continued from page 8)

We moved the boat a short way down stream and made the second dive. After another hour on the bottom we all came up with pottery in our goodie bags. With two good dives under everyone's belt, we called it a day.

On the second day, we went to another location, which was a little further down river. I was up first again; I hit the water and went down. When I got to the bottom, I found that the current was pushing me very fast downstream. I

could not stop myself so I came up and grabbed the trailing line; I was so tired that they had to pull me in. Guess that's what the line is there for! When I finely got on board, I realized that the current had just whipped my butt. However, I did manage to snag a piece of pottery as I sailed by.

We moved again and I got back in the water. I had a hard time finding anything. I spent the next hour trying to find something. I did find a few



Combahee River Project volunteers Dennis Coco (left), Jim Hickman (middle) and archaeologist Dr. Chester DePratter (right)

pieces of pottery and a broken Savannah spear point. When I got back on the boat Ashley told me that they had been watching three alligators on the surrounding banks giving them a great show.

As we were leaving, I saw one that looked as big, if not bigger than, me.

A happy Ashley, two happy archaeologists, and a good dive makes a good day on the river. ■

Carl Naylor Retirement Celebration

By Ashley Deming, SDAMP

After 26 years, Maritime Research Division Archaeological Technician Carl Naylor has decided to retire and lead a life of leisure.

Carl started his career with SCIAA in 1987 as a diver for the Underwater Archaeology Management Program (UAMP). His role has morphed overtime to include diving, boat captaining, hobby license

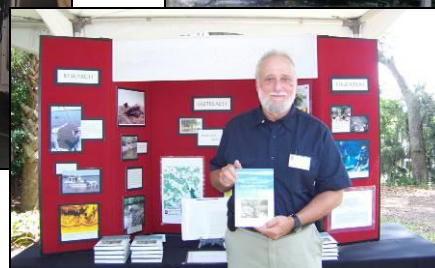
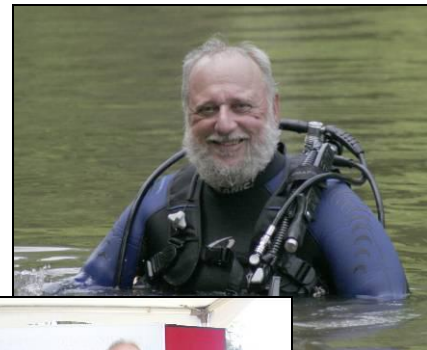
management, publication editor, group historian/researcher, public education and outreach, author, and general jack-of-all-trades. Each new addition to his job description never seemed to faze him as he took it all in stride. Guess it has all been a far cry from his previous fast paced career as a newspaper editor in Manning and Walterboro.

For those of you who know Carl, you know that he is a wealth of information about SC maritime history. You also know that he is quick-witted, mild-mannered (yeah, right!), and the first person to step in and give you a helping hand. He's a real character and things will never be the same around here without him.

Please come celebrate

the wonderful memories Carl has made with us over the years at his retirement party on **September 11, 2013** from **6:30-9:00pm** at the British Bulldog Pub in Columbia, SC.

We will be sharing some of our favorite Carl stories and we hope you will come and do the same. Let's commemorate 26 years of service by one heck of a guy!



Diver Safety

Diving Safety: Getting to the Heart of the Matter

By Dan Orr, President Emeritus, DAN Foundation

While scuba diving in all its various forms is inherently safe, it is not without risk. When scuba diving, the underwater environment alone can give rise to a significant number of potential risks. From the latest diving accident and fatality data from Divers Alert Network (DAN), the majority of deaths while diving are simply listed as drowning. While drowning may very well be the ultimate outcome of a diving accident, there may be any number of factors leading up to this final, fatal result. The DAN data has indicated that approximately 28% of diving fatalities each year are a result of cardiac events during the dive. While these divers may very well have had a similar cardiac event take place while jogging, gardening or even sleeping, they occurred during a diving excursion and, therefore, are classified as a diving fatality. Although it is disturbing that these fatalities occurred while participating in an otherwise safe and enjoyable sport, what, in my opinion, is most distressing is that approximately 60% of those who died as a result of a cardiac events associated with scuba diving, had signs and/or symptoms that were

recognized as cardiac related before or during the dive, but they continued to dive anyway. Although we are not our brothers' (or sisters') keepers, had they or one of their diving companions simply 'called' the dive or questioned whether it was prudent to continue, the fatal situation may have been averted.

With an aging diving population in the U.S. (the average age of injured recreational divers being somewhere between 40 and 50), diseases associated with age are likely to be an issue. When you look at sports-related deaths, coronary artery disease is the leading cause of sudden cardiac death in those over the age of 35. The risk of cardiac-related death in divers steadily increases with age with divers older than 50 having a risk 10 times that of divers under the age of 50. The insidious part of this equation is that those with cardiovascular disease may be totally unaware of their condition and be completely asymptomatic.

We know that diving exposes divers' bodies to various stressors that independently affect cardiovascular function. These stressors include immersion, exposure to cold, increased partial pressure of oxygen and increased workload while

diving. The combined effect of these factors is that the volume of blood in the vessels of the chest and heart increases significantly, stretching the walls of the heart and major vessels. With immersion, blood pressure slightly increases and the heart has to work harder to maintain circulation. These conditions contribute to various changes in heart rhythm (arrhythmias) that range from a slow heart rate (bradycardia) caused by cold to fast heart rate (tachyarrhythmia) caused by the body's response to stress. Older divers, especially those with cardiovascular disease, are at greater risk of adverse reactions to these stresses. It is vital that divers be aware of the effects of immersion on the cardiovascular system while SCUBA diving. There is an increased strain on the heart due to immersion and constriction of peripheral blood vessels, an increased physical workload due to the resistance of water and the increased work of breathing through the regulator. When you add additional exertion caused by swimming against a current, wave action or simply working hard to compensate for poor buoyancy, the risk of a dive-provoked cardiac

event may be significantly increased. This risk can be exacerbated by emotional stress brought on by diving in an unfamiliar location or beyond ones limits.

When the heart function fails to keep pace adequately with these increased demands, a condition known as pulmonary edema may suddenly occur while at depth. Shortness of breath and fluid buildup in the lungs is a largely under-reported hazard of diving, as these cases are often not classified as 'diving accidents'. Immersion pulmonary edema occurs frequently even in young, healthy individuals, during cold water exposure, and physical or mental stress. Pulmonary edema may actually be responsible for a number of 'unexplained' drowning incidents.

Maintaining general good health and having an annual physical performed by a physician familiar with diving medicine is perhaps the most effective way to prevent these types of accidents. Also, any time there is a noticeable change in your health, you should consult a physician. A good medical check-up and advice can reduce the likelihood of a serious medical event in diving. Once diagnosed, a

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Diver Safety (Continued from page 10)

physician may advise against continuing to dive or impose modified diving habits or limits.

Remember, if your family physician is unfamiliar with diving, you can consult Divers Alert Network for a referral to a physician familiar with diving medicine or a consult with your personal physician. A

word to the wise, a physician who dives may not necessarily be a diving physician.

While sudden cardiac death in the general non-diving population occurs at comparable rates and with a nearly identical age-related pattern as it does in diving, the outcomes of these events while in or under the

water are likely to be quite different because of the reduced likelihood of being resuscitated. In addition, it may be far easier to access emergency medical services when a cardiac event occurs on land as compared to being at a remote dive location.

The best way to avoid cardiac-related issues in

diving and not put yourself or your diving companions at risk is to adopt a healthy lifestyle and always be aware of signs or symptoms of a medical problem. It is far better to ‘call the dive’ or ‘call for help’ than to risk a tragic outcome. A good health philosophy is just as essential as any piece of life support equipment. ■

Conservation Corner

Treating a *Lignum Vitae* Sheave from the Hilton Head Wreck

By Johanna Rivera, Conservator, HL Hunley Project, Warren Lasch Conservator Center, Clemson University

The Hilton Head wreck was first reported in late 2010. The wreck is beached near Sea Pines Plantation but only a small portion of the wreck outline has been exposed at low tide. The wreck was further studied and recorded in the 2012 Field Training Course organized by SDAMP (*Quarterly Reporter* Volume 3, Issue 3). During this season, very few artifacts were found, among them a wine glass stem, a stoneware fragment, a textile fragment and a wooden sheave. The sheave was buried in mud and stuck between the stempost and the first cant frame. Upon recovery, all the artifacts and samples were kept in fresh water to lower the salt content until further conservation.

We received the sheave and the textile fragment at the Warren Lasch Conservator Center earlier this year. The sheave was identified to be made of *Lignum Vitae*, a very hard

wood often used for ship fittings. *Lignum Vitae*, literally translates to the “wood of life.” It is obtained from a tropical tree and is one of the hardest commercially used woods. The high resin content of this wood combined with strength make it especially suitable for shipbuilding.

The overall condition of the sheave was excellent, though some transversal and radial cracks were observed during the initial analysis. These cracks were not obvious at first as the wood is very dark and the surface is waterlogged. The object was documented and then probed with pins to measure the density of the wood. This is an important test as the density and water content of the wood will give us an idea of how waterlogged this artifact really is. Using this test allows us to determine the final treatment and drying of the wood. The test showed that the wood was well preserved as the wood

was very dense.

The artifact was cleaned and then soaked in a very low concentration of polyethylene glycol to consolidate the surface and avoid cracking of the wood during drying. After a month soaking in the consolidant, we began the slow process of drying. Since the wood was well preserved, we determined that the best approach was to slowly air dry the artifact

without subjecting it to a freeze drying process. The artifact was wrapped in fine plastic sheets (we began at 100% relative humidity) and the weight controlled every hour the first couple of days and then every 4 hours. The artifact slowly started losing weight as the water began *evaporating* (the freeze drying process for instance happens by means of *sublimation*, in which the

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Warren Lasch Conservator Center
Conservator, Johanna Rivera
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Conservation Corner (Continued from page 11)

artifact is put on a chest freezer and the water within the artifact is frozen at a very low temperature. Eventually the ice will sublimate –ice to vapor– and the artifact slowly dried).

The sheave has been in

the drying process through evaporation, for a couple of months. The cracks that were observed before treatment are more obvious now, as the wood coloring is getting lighter. As with any conservation treatment, there are some risks

associated with drying artifacts that have been waterlogged for maybe hundreds of years, but as conservators, we try to predict the behavior of the materials when in treatment and minimize the risks as much as possible. So far,

the treatment has gone well but it's impossible to determine when it will be finished. Only the artifact will let us know when it's ready.■



Hilton Head wreck sheave in situ
(photo courtesy of Bruce Orr)



Hilton Head wreck sheave just after recovery (photo courtesy of Don Davis)



Hilton Head wreck sheave profile
(photo courtesy of Don Davis)



Port Royal wood. Lignum Vitae recovered from a wreck from Port Royal that did not receive any kind of conservation. Note the extensive cracking and collapsed surface.



Picture taken before conservation. Note the cracks on the right side of the image, as well as some on the left, are not that obvious as the coloring of the wood is very dark. Copyright FOTH



Picture taken during drying. The same cracks are more apparent now that the wood began drying. Copyright FOTH

Paleontologist's Panel

Hobby Diver Summer 2013

By Dave Cicimurri, Curator of Natural History, South Carolina State Museum

Well, the first two quarters of 2013 have already passed, and I'm sure you're eager to take advantage of the summer weather and get out to your favorite dive spots. Before you plan that first trip for the third quarter, be sure that all of your fossil **and** artifact reports for each quarter that you were licensed between 2011 and the present have been turned in. SDAMP and South Carolina State Museum (SCSM) are working together on reviewing dive reports, and you're now hearing from both of us when it comes to overdue reports. So, avoid the nagging paleontologist and archaeologist by taking a few minutes to complete your report(s) by checking the "no recoveries" box, or listing the types of fossils or artifacts you've found. By

being up to date, you'll also avoid the nail biting while waiting for your permit renewal to go through.

During the past six months, we've received several donations of fossils from hobby divers, including the partial dolphin skull in the photo. These fossils are important additions to the SC State Museum's paleontology collection, and the dolphin skull, for instance, probably represents a new species record for the state. Be sure to send a photo or two of your discoveries, and consider donating particularly interesting specimens (or at least letting us make a cast) so that we can better understand SC's ancient history and share this with the general public. The dolphin skull will be part of an upcoming temporary

exhibit focusing on the State Museum's recent acquisitions.

Speaking of exhibits, SDAMP and SCSM have recently identified a space on the State Museum's natural history floor for a SDAMP-themed rotating exhibit. The purpose of the exhibit is to educate the public about the sport diver program, and we hope to include fossils and artifacts

that have been found by hobby divers for display. The SCSM is also contemplating a series of workshops, similar to the artifact workshops currently offered by SDAMP, to help divers identify the fossils they find. We're working out the details for the exhibit and workshops, so keep an eye on future newsletters for updates.

Have fun in the water! ■



Paleontologist Dave Cicimurri
(photo courtesy of the SC State Museum)



Donated Dolphin Skull
(photo courtesy of the SC State Museum)



Future Hobby Diver Program exhibit space at the SC State Museum
(SDAMP photo)

The Sport Diver Archaeology Management Program

The *Quarterly Reporter* is a quarterly newsletter from the Sport Diver Archaeology Management Program (SDAMP), part of the Maritime Research Division of the South Carolina Institute of Archaeology and Anthropology at the University of South Carolina.

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Letters to the Editors

If you have something that you would like to say about the program or have questions that you think others like yourself would like to have answered, look no further. This section of the newsletter is just for you. Send in your

questions, comments, and concerns and we will post them here. You can also send in comments responding to letters from other hobby divers. Ashley and Carl will respond to your comments and answer your questions for all to

read.

Just like your artifact report forms, you can email, fax, or send your letters to SDAMP. We look forward to hearing from all of you.■

Notes from the Editor

Starting January of 2013, we ramped up our partnership with the South Carolina State Museum (SCSM). Dave Cicimurri, the Curator of Natural History at SCSM, has been working with us since late 2011 to try to help streamline the submission process for fossil reports.

In an effort to see more consistent submissions of reports, SDAMP and the SCSM are working together to make sure each licensee knows when both reports are due, which agency gets which reports, and when reports are late. Dave has started emailing individuals who are late with their fossil reports as a reminder to file

them on time.

SDAMP and the SCSM have also been communicating regarding renewals. Although it has always been required that you file both reports each quarter, the fossil report requirement was a little more lax as the SCSM did not issue renewals. Now that we have great communication with the Museum, SDAMP can check on fossil reports too!

Some of you may have noticed a small change in your renewal process this year. When you submit your renewal paperwork, we not only check to make sure that your artifact reports are up to date, but we also send your name

and license number to Dave at SCSM. If you are missing reports with him, he will email you to let you know which reports you must submit before you can be renewed. Once we hear from him, we will process your renewal. If you would like to check with him regarding your fossil reports, you can email him at dave.cicimurri@scmuseum.org.

Artifact report submissions have been looking great! About 90% of incoming renewals are not missing any artifact reports. Keep up the good work and let's try to get the same great stats for fossil reports!■



**Ashley Deming
&
The Legendary
Carl Naylor**

Useful Website Information

For more information on

SDAMP: <http://artsandsciences.sc.edu/sciaa/mrd/sdamp.html>

MRD: http://artsandsciences.sc.edu/sciaa/mrd/mrd_index.html

SCIAA: <http://artsandsciences.sc.edu/sciaa/>

SCIAA publication *Legacy*: <http://artsandsciences.sc.edu/sciaa/legacy.html>

