

# Quarterly Reporter

## Things You Need to Know:

- 2011 Quarter 2 Reports Due July 10, 2011
- NEW E-Form Available Online
- Field Training Course Sign-Up
- SDAMP Wing Night June 29, 2011

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*"Helping to preserve and protect South Carolina's maritime heritage through research, education, and public outreach."*

## 2011 Allendale Edition!

By SDAMP

We had another great year at Allendale! This year we had the opportunity to work with some familiar faces, but also many new ones. We were so pleased to have such an incredible group to work with. This year, we were joined by a total of 10 hobby diver volunteers and a couple of Allendale Expedition interns who saw how much fun we were having and couldn't resist joining in. Although not divers, they took to wetsuits like they were fish and worked very hard alongside our hobby

diver Dredgeheads. We are proud of each and every one of you for a job well done.

We continued excavating using airlifting and dredging at the Big Pine Site. This year we added our pontoon to the mix as a diving platform and control center. Although we are just about wrapped up with this site, we were still able to find some incredible stuff. Five minutes wouldn't go by without hear some hooting and hollering from the land screeners, followed by a squawk over the

walkie-talkie saying they had found another beautiful point. We even found some very exciting points that might pre-date Clovis! You can read more about these points on page 9.

Both weeks were filled with hard work, "Allendale dredge-mud facials," and laughs. Thanks to everyone who participated and broke their backs for the project. Dredgeheads rule!

Read more from our 2011 Dredgeheads on pages 6-10.■



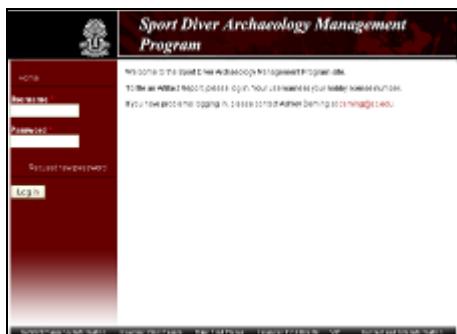
Dredgeheads Week I



Dredgeheads Week II

This image shows the 'Artifact Report Form' from the South Carolina Institute of Archaeology and Anthropology (SCIAA). The form is a scanned document with various fields for reporting artifacts, including sections for artifact details, site information, and reporting agency.

### **Quarterly Reports due by July 10, 2011**



This is a reminder that your 2<sup>nd</sup> quarter 2011 reports are due by July 10, 2011. These reports should cover all of the collecting you have done between April 1<sup>st</sup> and June 30<sup>th</sup> of this year.

All report forms can be found on our website at:

[www.cas.sc.edu/sciaa/mrd/sdamp\\_hdl\\_forms.html](http://www.cas.sc.edu/sciaa/mrd/sdamp_hdl_forms.html)

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

Your *artifact* reports should 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](mailto:sdamp@sc.edu)

Or you can submit forms online at:  
[www.cas.sc.edu/sciaa/mrd/sdamp\\_hdl\\_eaqrf.html](http://www.cas.sc.edu/sciaa/mrd/sdamp_hdl_eaqrf.html)

(Note: If this is the first time you are filing on this system, you will need to create a new password by clicking the link below the sign-in boxes).

Your *fossil* report forms should be sent to:  
Chief Curator of

Natural History  
301 Gervais St.  
Columbia, SC 29201

Make sure that you file reports with both agencies even 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:

[www.cas.sc.edu/sciaa/mrd/sdamp\\_hdl\\_forms.html](http://www.cas.sc.edu/sciaa/mrd/sdamp_hdl_forms.html)

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

## **June Artifact Identification Workshop**

On June 11, SDAMP hosted the final Artifact Identification Workshop of the year. The workshop was located at the SCIAA building on USC's campus in Columbia. Ten students participated in this workshop and learned

how to identify artifacts ranging from Early American spear points to glass bottles of the 20<sup>th</sup> century. It was a long day with a lot of information to process, but the students did an incredible job and really worked together

to understand South Carolina's past. Their knowledge of the day was tested in the finale activity, speed dating.

SDAMP workshops consist of a mixture of lectures and hands-on sessions designed to give

students the most information possible for field identification. If you want to learn more about our Artifact Workshops, contact Ashley Deming at [deming@sc.edu](mailto:deming@sc.edu).■



**June 2011 Artifact Identification Workshop Students**

## Upcoming Events

### SDAMP Wing Night!

Because the first one was such a success, SDAMP will be hosting another Wing Night on June 29<sup>th</sup> at 6:30pm at Wild Wing's Café in Mt. Pleasant. This is a fun and relaxed evening to get to know other hobby divers and make friends. Bring friends and family for a night of crazy dive stories and fun!



**SDAMP  
Wing Night**

### SDAMP Underwater Archaeology Field Training Course

We will be holding Part I and Part II of the field training course this year. Part I will run from July 23-24 in Charleston and Part II from October 21-23 on Hilton Head Island. Please read page 4 for details.

### Greenville Dive Club Presentation

SDAMP will be heading up to Greenville, SC on July 13<sup>th</sup> to talk to the Social Dive Club associated with Bermuda Triangle Scuba. If you're in the area and would like to come and see us, our presentation starts at 6:30pm at the dive shop. For more info on the club call 864 286 3483.

*October Lecture Series*  
SDAMP is teaming up with the Chalreston County Library for a maritime archaeology lecture series this October. The series will take place every Wednesday in October at 6:30pm. Guest speakers will be there to lecture and answer questions about SC maritime archaeology, the *Hunley*, remote

## 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

- On April 9<sup>th</sup> Ashley Deming gave a presentation at the Annual Archaeology Society of South Carolina Conference. The presentation

discussed what SDAMP has been up to over the past year and future directions of the program.

- SDAMP gave a talk to the Coastal Carolina scuba club, CUDA, on April 13<sup>th</sup> to 10 students.

- On April 14<sup>th</sup>, SDAMP deployed a few Cooper River Maritime Heritage Trail buoys. There are none on the trail at this time (see page 14).

### May

- SDAMP joined the Allendale Expedition for the first two weeks of May. Read more about this project throughout the newsletter.

- On May 21<sup>st</sup> SDAMP set up an archaeology of piracy display at the Charleston Museum as part of their Pirate Day event.

- SDAMP hosted their first Wing Night on May 25th. Fifteen hobby divers and family and friends joined us. We all had a great time! Join us June 29<sup>th</sup> for another fun night of wings and dive stories!

### June

- On June 11<sup>th</sup> SDAMP help an Artifact Identification Workshop for 10 students in Columbia (read more on page 2).
- SDAMP was invited to

sensing, and more. Lectures are free and open to the public. Contact Ashley Deming at [deming@sc.edu](mailto:deming@sc.edu) for more information.

### SDAMP Oyster Roast!

We will be hosting our first ever Oyster Roast this November 19<sup>th</sup> from 4-7pm at Fort Johnson in Charleston. This is an event to raise awareness for the needs of maritime heritage in South Carolina. Much more information to come soon!

There will be many more events throughout the year. Please continue to read the *Quarterly Reporter*, emails, and our website for information about upcoming events and volunteering opportunities. ■

the *Hunley* facility to watch the rotation process. For more info on the rotation visit: [www.hunley.org](http://www.hunley.org).

### Upcoming...

#### June

- SDAMP Wing Night on June 29<sup>th</sup> at 6:30pm (see above for details).

#### July

- Field Training Course Part I July 23-24. Contact Ashley Deming at 843-762-6105 for details on how to sign up.

Much more to come throughout the year! ■

## Field Training Course Part I & II

SDAMP is offering our field training course in underwater archaeology again this year. We are pleased to announce that we will be offering Part I as well as Part II. This course is designed mainly for hobby divers, but is great for anyone who wants to get involved with underwater archaeology.

### *Part I*

Part I consists of teaching basic techniques that can be used in the field to observe, report, and record underwater sites. This course will be a mixture of hands-on activities and lectures designed to teach the average diver how to be first responders to sites that they may come across while diving. Think of it as a kind of Field Underwater Archaeology 101.

The class will be on Saturday and Sunday, July 23 & 24. Saturday will consist of classroom lectures and dry land hands-on sessions, while Sunday will be underwater sessions using the skills developed on Saturday. Part I is available to 10 students. The cost is \$150 per person. This includes both days, a handbook, all materials involved, and air tanks. Divers will need

to provide their own dive gear, lunches (food and drink for all day), and transportation. The Saturday session will run from 9am-5pm at the Fort Johnson Marine Resource Center in Charleston. The Sunday session will be located at a training pond in Awendaw and run from 10am-4pm.

When: Saturday and Sunday, July 23 & 24

From: Saturday 9am-5pm, Sunday 10am-4pm

Where: Saturday- Fort Johnson Marine Resource Center, Charleston & Sunday-Awendaw

Cost: \$150- make checks payable to USC and send them to:  
FTC Part I  
PO Box 12448  
Charleston, SC 29422

Please email me at: [deming@sc.edu](mailto:deming@sc.edu) or call (843-762-6105) asap if you are interested. I

will need checks by July 8<sup>th</sup> if you would like to attend Part I.

### *Part II*

Part II is a 3-day course taking place on Hilton Head Island where we will be excavating and recording a beached shipwreck. You *must* have attended Part I to be able to sign up for Part II. We will be using all the techniques of Part I to accurately record this site. You will be working alongside maritime archaeologists to record a site that has never been recorded before. We will be staying at Waddell Mariculture Center which will also serve as our base camp for evening meals, lectures, and drawing up our measurements from the day.

Food, lodging, and recording equipment will be provided, but you will need to provide your own wetsuit and

appropriate weather gear.

This course is designed for a maximum of 6 students.

When: October 21-23, 2011

From: 8am October 21<sup>st</sup>-5pm October 23<sup>rd</sup>

Where: Hilton Head Island

Cost: \$250- make checks payable to: USC Education Foundation Send payment to:  
FTC Part II  
PO Box 12448  
Charleston, SC 29422

Please contact me as soon as possible if you are interested in attending one or both parts of the Field Training Course. You may sign up for both at the same time.

This is a great opportunity to get down and dirty with real maritime archaeology, so sign up now!■



**2011 FTC Part I Students**



**Hilton Head Wreck**

## Diver Safety

### How Did I Get Myself in This Predicament?: “Out of the Darkness”

By Dan Orr, President, Divers Alert Network (DAN)

When DAN researchers analyzed nearly 1,000 recreational diving fatalities, as was discussed in the previous article, “insufficient gas” or “running out-of-breathing gas” was the number one triggering event in sport diving fatalities. Nearly 400 divers might be alive today if they had been able to successfully manage their breathing gas supply. The second most common triggering event was “entrapment.” Nearly 20% or approximately 200 divers in the fatality records studies found themselves in a situation where they were trapped in a cave, cavern, wreck or under ice and they could not successfully find their way out.

Every training organization warns students about the dangers of entering any overhead environment without appropriate training and

equipment. An overhead environment is defined as any situation where the diver does not have direct, vertical access to the surface. Generally, we think of an overhead environment as a fixed, hard surface such as the roof of a cave, cavern or ice sheet. A virtual overhead may exist when a diver cannot surface due to decompression obligation or dangerous surface conditions (i.e., boat or ship traffic).

Prior to coming to DAN, I was the Associate Diving Safety Officer at Florida State University. I was also a Board member and local safety officer for the National Association for Cave Diving (NACD). When reviewing cave diving fatalities, it is evident that the majority of those who died in water-filled caves were not trained or certified cave divers. Many of those who died in caves were

recreational divers who decided to see what the inside of a cave looked like and found themselves lost and unable to find their way out. I was so concerned about my students entering a cave without the proper training that I spent time in each openwater diver class talking about how senseless it was for someone to go into a cave without training, the horrors associated with getting lost in the a cave, *and spending the rest of your life watching your pressure gauge go to zero!*

Everyone who is trained and qualified to dive in overhead environments lives by certain cardinal rules of safety. These are:

- Do not exceed or ignore the limits of your training (and experience by implication).
- Always maintain a continuous guideline to open water / the surface.
- Plan dives around adequate gas volumes and oxygen partial pressure using the “Rule of Thirds.”
- Stay within the working depths of your equipment, your level of concentration, nitrogen partial pressure, and comfort zone.

- Carry backup lights to preserve safety and comfort in the event of primary light failure.

These rules were designed to help reduce the likelihood that a qualified cave diver would get into a situation that could compromise their safety.

In reality, the way to approach this second most frequent triggering event resulting in a diving fatality is very simple. Never enter any situation where you do not have direct, vertical access to the surface without having the appropriate training, equipment, planning and execution. When in doubt, **STAY OUT!** For more information on DAN visit:

[www.DAN.org](http://www.DAN.org) ■



(Photo courtesy of DAN)



The Divers  
Alert  
Network

## 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](mailto:sdamp@sc.edu) ■



**SDAMP at Pirate Day at the Charleston Museum**

## Fun and Productivity as a Hobby Diver

By Bob Costello, Hobby Diver #4563

The Hobby Diver Program furnishes an opportunity for an avocational archaeologist to contribute to SC archaeology as well as having fun collecting SC waterways. The seeds of my capacity to enjoy the pursuit of archaeology were sown very early in my life when in the mid 1940s my parents, Donald and Helen Costello, took me to fields around Chapel Hill, NC to collect "arrowheads." My mother recounted in her later years that if she wanted to see much of Dad on the weekends, she had to go on these expeditions.

After a long hiatus, my interest in archaeology was rekindled in the summer of 2000 by reports of amazing finds on the shore of Lake Marion, the most extraordinary of which

was a story from an outdoorsman of a whole pot found on Persanti Island. I persuaded a friend with a canoe to take me out there; and was captivated by the abundance of beautiful pot sherds and a small number of projectile points. Not wanting to prevail on others for access to this cornucopia of archaeological treasures, I purchased kayaks and began making regular trips to shore areas in Hickory Top Wildlife Management Area, up the lake from Santee National Wildlife Refuge (off limits for artifact searching and collecting).

Over the years my collecting sophistication has evolved from simple narrative accounts to serious documentation of my finds employing measurements, digital

photography, and GPS data recording, the latter in-situ for every significant artifact I encounter. I share these data with SCIAA in conjunction with Hobby Diver Report Forms and thus hope that my findings will be

preserved for future generations.

The accompanying photo is of an orthoquartzite Dalton point found in 2008 north of Persanti Island in Lake Marion. ■



**Dalton point** (photo courtesy of Bob Costello)

## Allendale Stories

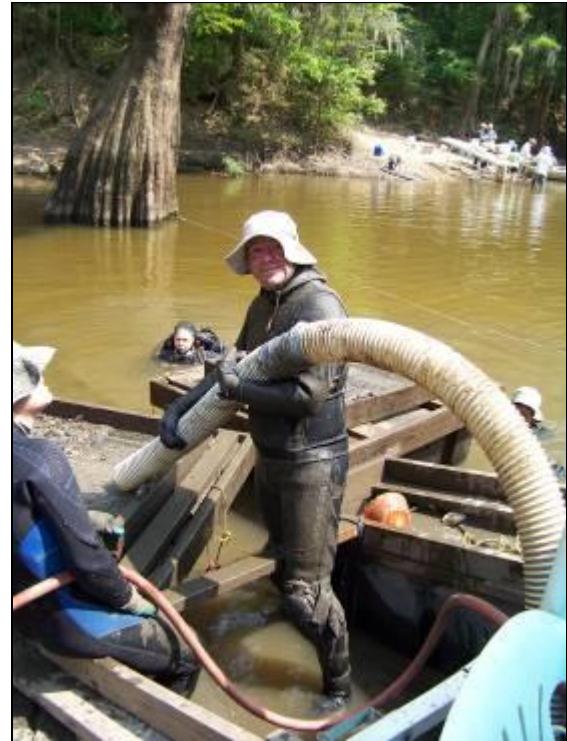
### Dredging up the Past

By Jay Hubbell, Hobby Diver #4041

Looking for a fun thing to do next spring? Have you ever thought of rewriting our history? If you're an artifact diver who likes getting wet, I have the job for you. Each year during the first two weeks of May there are volunteer diver opportunities working on the Allendale Project. Archaeologists from all over get together for a concentrated two-week period in which we dig up artifacts that help give us a true picture of the early inhabitants of South Carolina. You don't need to know

much about archaeology to participate. There is plenty of expertise on site.

As a diver, you will be operating an airlift and a dredge depending on the water depth. This year we worked in a creek off the Savannah River and brought up hundreds of artifacts. For the folks working on the land excavations it's a slow, tedious job "shnitting" (archaeologists term for digging down with a sharpened shovel a centimeter at a time).



**Jay Hubbell getting an "Allendale Mud Bath"**

For the divers it's much faster. Visibility is a whopping zero. The water temperature is on the chilly side so bring a wet suit. What you do is feel around for gravel or rocks and suck that stuff up with the dredge. Some team members are on a screen on the discharge side examining what comes out of the dredge. Finally, the screen is sent to the experts on the bank. They select the true artifacts from the rocks. At the end of the day all the artifacts found are on display at the camp site. There is always a scientist there to let you examine our daily find and explain exactly what you're looking at. If you're into history you'll find this part of the day to be most interesting. The archaeologist can take what looks like a simple rock and spin an interesting yarn about how the tool was used 13,000 years ago. I remember looking at a small rock that turned out to be a scraper tool that came from Tennessee. What was it doing at Allendale? How did they know it came from Tennessee?

Of great interest to me was the fact that we were bringing up artifacts that challenge conventional belief that the Clovis people first

arrived in this area 13,000 years ago. We are finding artifacts that date back 16,000 years.

Volunteers can work for a few days, a week or the entire two-week period. We stayed for free on a campground provided to us by Clariant, the owner of the land on which we are working. Some of us who really like our creature comforts stayed at nearby motels. A typical day starts about 7:30AM. We meet at a large building on the campsite, get our gear together and head to the creek. About 4:30pm, we return to the campground to shower and examine what was found that day. Dinner usually starts at 7:00. Food is provided and, with some great chefs on the staff, it is quite tasty. After dinner there is a presentation on some aspect of archaeology for those interested. As is normal on dive trips the greatest joy is the camaraderie. You will be working with divers, archaeologists, young students, and old retirees from all walks of life. It's always fun to swap stories and some of the ones I heard were whoppers!■

## My Allendale Experience

By Jason Bane

Driving up from the guard shack into the camp area of the Topper Site project, I was immediately taken aback by the amount of friendly faces that were there to greet me. I was then introduced to the amazing Topper Site and its surroundings; the enormity is nothing less than magnificent. The unfathomable amount of man-hours that have gone into it is daunting and my realization that I was about to be a part of this amazing project was exhilarating.

My surprise would not be diminished when I then

climbed aboard the pontoon boat that would act as the epicenter of activities for my week on and in Smith's Lake Creek. Everyone that had spent time in and around the dredge site were incredibly friendly and helpful. So much so that I was more nervous about not being able to produce something worthwhile than I was about diving in pitch black water in the day time while attempting to hold onto a powerful hose and sweeping around for artifacts.

After 20 minutes, my first dive

was over and I was already eager to go back down and do it over again. I was told that my first dredge was plentiful with artifacts. Being a complete novice to archaeology, the reality of what I had just unearthed hit me. I just found items that were left behind thousands of years ago by the very first people to inhabit the state that I call home. That is when I realized I was part of something incredibly amazing and so much greater than myself. From the mission, to the people and the simple amazement of the

artifacts my time spent went by incredibly fast... to wrap up my entire trip in one word, it would be "special." ■



**Allendale Volunteer  
Jason Bane**

## Once a Dredgehead, Always a Dredgehead...

By Catherine Sawyer, Hobby Diver #4913

What in the world was I thinking? Having survived the 2010 Allendale Expedition was I seriously considering going back for 2011? Did I really

want to put on all that gear and dive into the cold, dark water just to play in the mud? Of course I did!

Those of us returning Dredgeheads

were anxious to pick up where we left off in 2010. Ashley had the site mapped out and knew just where to start diving. The new divers quickly learned the ropes and we were in business. Finally it was my turn to get in on the action. Once I caught my breath from the initial chill of hitting the water, I was good to go down the airlift and start working. What a great sound to hear that chert going up the airlift!

While you are on the bottom of Smith Lake Creek in the dark, your mind tends to

wander a bit. You wonder what might be in the water with you. Maybe watching all those episodes of "River Monsters" wasn't such a good idea last week! At least you haven't seen George (the local alligator) yet this trip. Hey wait—that feels like a big piece of pottery. Better not send it up and take a chance on clogging up the airlift. Don't want to be the first one to do that! Just hang onto it and carry it up later. Hmm...wonder how cold this water really is?

Sure would be nice if I  
**(Continued on page 9)**



**A few recovered points from the dredge site**

## Always a Dredgehead... (continued from page 8)

could read my gauges and check. Think I need to move a little to the left and start a new spot. Bet the guys on the screen are hating all that stinky pluff mud I am sending up! There it is—that feels like gravel. Love to hear that sound like broken glass clinking together—I'm in the chert now! Damn it—there's Ted tapping my hand to tell me my 20 minutes is up. I don't want to quit but then

again I do want to know if anything has come up on my shift. Did we find a point that hasn't seen the light of day in thousands of years? Maybe a piece of stamped or punctate pottery? Sure hope the screening crew back on land are cheering when I surface! It turned out to be a really great two weeks. I got to see old friends from last year and meet some new folks. Working with Carl and

Joe is always fun—I love to hear their tales of dive adventures. We found an amazing amount of artifacts too! I must be a real Dredgehead since I can't wait to do it again next year. Guess that pluff mud gets in your bones...it sure gets into everything else! ■



**Jess (left) and Catherine (right) as dredge monkeys**

## Possible PreClovis Projectile Points Recovered by SCIAA

By Tom Pertierra, SEPAS, Hobby Diver #3872

The 2011 Allendale Expedition's Underwater Field Season was once again a tremendous success due in no small part to the exceptional work done by SCIAA's professional underwater team and their extremely talented group of South Carolina hobby divers.

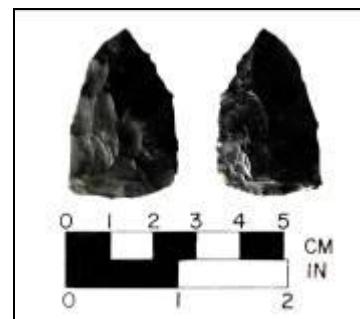
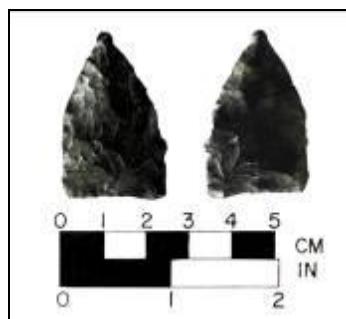
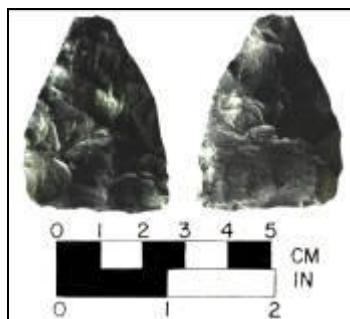
Among their submerged recoveries were three thought-provoking stone projectile points that possibly link the Big Pine Tree site in South Carolina to Meadowcroft

Rockshelter site in Pennsylvania and the Cactus Hill site in Virginia. Both Meadowcroft and Cactus Hill contain solid scientific evidence of preClovis occupations and each has produced morphologically similar point types recovered from sediments that date earlier than Clovis. The Clovis period dates to around 13,000 years ago, whereas these points could date to between 16,000-19,000 years ago.

The earliest component at

Meadowcroft is called the Miller Complex, and artifacts associated with it show a sophisticated stone tool technology. The unique projectile points recovered in situ are small pentagonal shaped, heavily end-thinned, bifacial points called Miller lanceolates. The Cactus Hill site also produced a similar point type recovered in sediments resting below their existing Clovis horizon. The three examples recovered from this year's dredging operation at Big Pine

Tree exhibit intriguing Miller-like characteristics. They are made from local Allendale chert and morphologically the point type does not appear in the South Carolina archaeological record. Although not a slam-dunk scientifically, their recovery is theoretically another fascinating piece of evidence in the archaeological mystery known as the "Peopling of the Americas." ■



**Three Miller-like points recovered from the Big Pine Site 2011 (photo courtesy of SEPAS)**

## 2011 Allendale Dredgeheads



Carl Naylor



Ashley Deming



Joe Beatty



Catherine Sawyer



Robbie Moore



Drew Ruddy



Gary Gist



Jason Bane



Randy Waites



Jim Hickman



Dennis Coco



Ted Churchill



Jay Hubbell



Jessica Bogstad



Kathryn Faircloth

## Conservation Corner

### Responsibility in the Recovery of Marine Artifacts Part 3: Organic Materials

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

In conservation, the term “Organic Artifacts” is used to describe objects made of materials that have been created from living cells from animal proteins or plants.

Animal proteins can be divided in two groups: Collagen (skin, leather, bone, and antler) and Keratin (hair, horn and wool). In the plant category we can find soft fibers such as cotton and hard fibers like hemp. In a separate category we find wood, which in conservation terms, we can describe as softwoods and hardwoods. Cell walls from wood are made of

complex molecules such as cellulose which provides durability and strength to these walls.

Organic artifacts that have been deposited in an underwater environment for long periods of time are found in a waterlogged state, meaning that all the interior cellular spaces are completely filled with water. These organic materials will have lost all their properties and would be swollen, without strength, and covered with sediment.

#### **Conservation**

Upon excavation,

organic artifacts need to be stored in containers filled with water at a low temperature. This will prevent the formation of algae and microorganisms. After stabilizing the artifact the material is identified, the surface is cleaned either by mechanical or chemical means, and then dried.

Drying in an uncontrolled manner could collapse the wood since water would rush out of the wood cells through evaporation “pulling in” the cellular walls creating cracks, fissures, warping or shrinkage. To prevent this type of damage, which is irreversible, organics needs to be slowly dry. The most used method by conservators is impregnation and freeze drying.

In the impregnation method, part of the water within the wood is replaced by a solution which supports the interior cell walls adding strength. Then the artifact is placed in a freezer (-36 F°) so the solution and water -still within the wood- would freeze. Once frozen the artifact is placed in a freeze dryer unit in which the ice contained in the cellular spaces will sublime (from

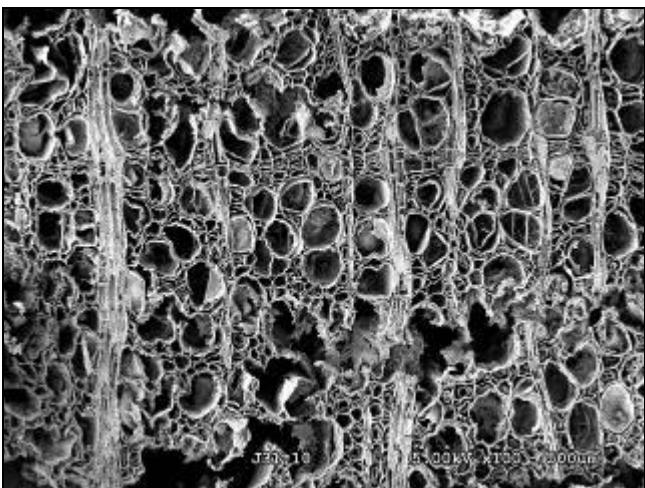


**Johanna Rivera  
Conservator**

solid to vapor) without passing through the liquid state (evaporation) which is what damages the cell walls.

For other types of organic materials that don't need impregnation (textiles or horn) a humidity chamber is used in which the humidity (set at a 90-100%) is slowly lowered to approximately 50%. It is always important to keep waterlogged organic artifacts wet at all times while in storage until conservation treatment can be performed. Every artifact is different and they may require different treatments and procedures according to the type of material and pre-existing damage. ■

(More images on page 12)



**Scanning Electron Microscope image of wooden cells. Note on the bottom right the cell walls are completely degraded due to their waterlogged state.**

©Friends of the Hunley

## Organic Materials (continued from page 11)



**Leather wallet before (1) and after (2) conservation.** ©Friends of the Hunley



**Pipe bowl before (3) and after (4) conservation.** ©Friends of the Hunley

## From Gunboat to Garbage Can: The Conservation of a Cannonball Part 2

By Ashley Deming, Maritime Archaeologist, SDAMP Manager

In January of 2010, Hobby Diver Jason Thompson donated a cannonball to SDAMP. Since we weren't sure if we had a potentially explosive Civil War shell or not, we were hesitant to begin the conservation process. The cannonball appeared to have fuses and we were reluctant to start banging on it to remove the concretions to see if the 'nodules' were fuses or not. After

much humming and hawing over whether or not we wanted to try this ourselves, we called upon long time hobby divers and experts at conserving iron objects, Glenn Dutton and Rufus Perdue. Glenn and Rufus are involved with raising and conserving cannons from the *Philadelphia* off the coast of South Carolina. With over 30 years of experience each, we felt sure these

gentlemen could give us the much needed info we required. To our great relief, Rufus kindly offered to come by our trailer office and remove the concretions for us.

Rufus looked the cannonball over and thought the same as everyone else, that this was most likely a Civil War fused shell. However, he wouldn't know for sure until the concretions were removed. He took the ball outside and gently started tapping the concretions with a hammer to knock off the heavily concreted bits. Although Rufus assured us there was nothing to worry about, as you might imagine, Carl and I stood some safe distance back using the zoom on the camera to get pictures of the first stage in the conservation process (Figure 1).

To all of our surprise, there were no fuses at all! The shell

appeared to be a solid round iron ball. The 'nodules' were just concretion after all. I must admit, I was a little bit disappointed not to have a Civil War shell to conserve, but mostly relieved that I didn't have to deal with the extra trouble of removing gunpowder and any other explosive chemicals from the ball. So, we didn't have a Civil War shell. Then what did we have? Our best guess, judging by the size and the uneven seam (Figure 2), we were probably looking at a Revolutionary War cannonball. This made me pretty fascinated since that is my personal historical period of interest. To have a cannonball that was involved in the pursuit of American freedoms, now that is exciting! Was it actual used? Who used it? Was it shot from a ship or off land? How did it come to end up in the water?

(Continued on page 13)



**Figure 1**  
**Rufus Perdue removing concretion**

## Cannonball Part 2 (continued from page 12)

These are the questions I found myself asking. We probably will never know the answers to these questions, but they are the types of questions that beat in the heart of every archaeologist. To be able to tell the story of the past through the objects left behind is what is so fascinating about this science. I digress...

We could now begin electrolysis on the cannonball to remove active corrosion and

stabilize the existing iron. Electrolysis is a chemical reaction that transfers ions from the anode (+) to the cathode (-) using an electric current through a water solution. This stops the oxidation (rusting) and removes chlorides from the artifact so it does not continue to corrode. We used a 26-gallon plastic garbage can as a container and filled it with a solution of water and sodium carbonate. A stainless steel trashcan was placed

into the container to act as the anode and is attached to copper wire with an alligator clip. The ball, acting as the cathode, is connected to copper wire using a stainless steel hose clamp. The cannonball wire is attached to a trailer light bulb. This bulb helps to regulate low amperage flowing through the circuit. Each end is attached to a DC battery charger that runs at  $\frac{1}{2}$  an amp to complete a circuit (Figure 3).

The cannonball remained in this set-up for 1 month and then was removed, the access corrosion cleaned off, and solution changed out (Figure 4). Once this was done, the ball was placed back into the solution and the process continued. The solution will be changed out and the ball cleaned every 3 months for a period of 1 year in total... *Read more about the conservation process in the next issue.* ■



**Figure 2**  
*Uneven mold seam*



**Figure 3**  
*Electrolysis Set-up*



**Figure 4**  
*Cannonball after first cleaning*

## Hobby Diver of the Quarter

This section of the newsletter is devoted to the hobby diver who goes 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 2011 goes to Hobby Diver #5117, Perry

Hackleman.  
Congratulations, Perry!

Perry is relatively new to the Sport Diver program, but he has gone above and beyond to help us out since day one. He has volunteered his expertise and time with the maintenance of our boat engines, helped us survey a shipwreck in Hilton Head, given us the use of his kayak for the Allendale project, and helped to pioneer

SDAMP Wing Nights. We are honored to have him as a volunteer and friend.

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



**Hobby Diver**  
**#5117**  
**Perry**  
**Hackleman**

## 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, University of South Carolina.

Ashley Deming- Chief Editor

Carl Naylor- Editor

## 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

This past quarter, many of you started to use the new online system to file your reports. Thank you for filing! If you haven't used the new system, please try to use it this coming quarter. It's a fast and easy way to file and it saves a ton of paper! It should take less than 10 minutes to use it for the first time. If you have any questions about the new system, please contact me and I will walk you through it. There are still some virtual updates to come this year, so keep an eye out!

I am pleased to say that, finally, over half of our current licensees filed their reports last quarter! It is still not enough, so let's make sure everyone files this quarter. Keep up the good work everyone!

In other news, we no longer have any buoys out on the Cooper River Maritime Heritage Trail. Due to weathering factors, we cannot deploy any of our trail marker buoys. We are still missing the Strawberry Wreck/Landing buoy. If anyone knows where

this buoy is, please let us know.

We would love to hear from you to know if you use the trail and anchor to the buoys or if you see people using the buoys. We are in the process of coming up with ideas on how to improve and maintain the trail, but really want to know what you think. If you have thoughts or suggestions about the Maritime Heritage Trails, please email them to me at [deming@sc.edu](mailto:deming@sc.edu). I hope to hear from many of you!■



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