

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

2012 Allendale Project

By SDAMP

We had an incredible time this year on our Allendale project! Our 2012 season kicked off on a new location, the Charles Site. The Charles Site is located just around the bend from our previous site at Big Pine. Like Big Pine, it appears that cultural material has eroded out of the bank and ended up in the creek bed. Additionally at the Charles Site, we hoped to find some source material. This meant we expected to find large chunks of chert or even whole outcrops of chert that was used to create the many stone tools we have discovered throughout the Topper location.

Over the two-

week period we were there, we were joined by 10 hobby diver volunteers. We had our veteran Dredgeheads from previous years, Dennis Coco, Ted Churchill, Catherine Sawyer, Carrie Miller, and Jim Hickman, but were also honored to have some newbies. Congrats to Teresa Donelan, Donnie Edwards, Sheldon Dubois, Herb Dubois, and Ryan Dubois who all earned new memberships into the Dredgehead family. We could not have done it without all of our amazing volunteers.

Each volunteer took turns dredging, screening, getting positively covered in Smiths Lake Creek

muck, and having an all around good time.

We excavated a number of diagnostic artifacts that spanned all prehistoric time periods. Excitingly, we even pulled up more of the Miller points that have everyone so very excited. Miller points may date to over 20,000 years old. These points have been discovered at less than a handful of sites in the country!

We are very excited to go back next year and see what we might be able to discover at the Charles Site. We hope you might be able to join us and become a Dredgehead too!■

Things You Need to Know:

- 2012 Quarter 2 Reports Due by July 10, 2012
- Artifact ID Workshop August 25, 2012

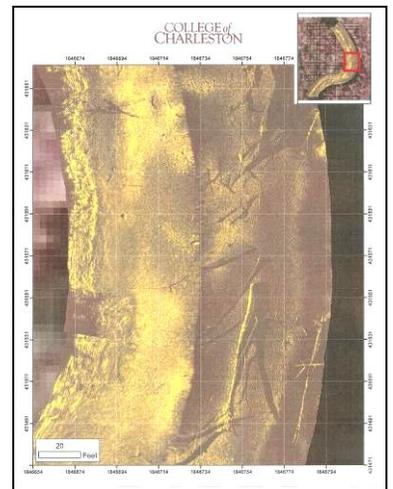
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2012 Dredgeheads (L to R: Ted Churchill, Carrie Miller, Joe Beatty, Jess Bogstad, Dennis Coco)

Side scan sonar image of the Charles Site



July Quarterly Reports

This is a reminder that your 2nd quarter 2012 reports are due by July 10, 2012. These reports should cover all of the collecting you have done between April 1st and June 30th of 2012.

Please file your artifact reports using our new online system.

You can submit forms online at: <http://src6.cas.sc.edu/sdamp>
(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).

All report forms can be found on our website at:

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 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

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

Or mailed 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

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



Quarterly Reports due by July 10, 2012

2012 Field Training Course

Over June 23rd and 24th, 11 students attended the SDAMP underwater archaeology Field Training Course (FTC) at Fort Johnson Marine Resource Center in Charleston. Students learned the techniques of how to scientifically record underwater sites through a series of lectures and hands-on activities during Day 1. On Day 2, students joined instructors Ashley Deming and Carl Naylor at a training pond to practice their newly learned skills in an

underwater setting. They recorded a mock wreck site, artifact scatter, a couple of gridded sites, and are now all experts in trilateration.

Students who graduate from Part I of the FTC are eligible to participate in Part II. Part II this year will be held on Hilton Head Island July 12th-15th, where students and maritime archaeologists will work together to excavate and record a beached shipwreck off of Sea Pines. This wreck was reported to SCIAA in 2010 and

has yet to be officially recorded by the State. Students will help SCIAA create a State site file so this wreck can be protected for future generations to learn from and enjoy.

Pictures from Part I can be viewed on the SDAMP [Facebook](#) page. ■



2012 Field Training Course Part I

Upcoming Events

FTC Part II

Four Part I students will be joining Ashley Deming, Carl Naylor, and Joe Beatty in Hilton Head to excavate an unknown shipwreck site on the beach. Part II will take place July 12th-15th. For more information on our Field Training Courses, please contact sdamp@sc.edu.

SC State Museum Roadshow

SDAMP has been asked by the SC State Museum to join them during their Museum Roadshow event on July 21st. SDAMP will team up with State Museum curator Dave Cicimurri to identify

artifacts and fossils for the public from 10am-2pm. Please note we will NOT be appraising any items.

July Wing Night

The next SDAMP Wing Night will be held on July 25, 2012. Wing Night will be in Mt. Pleasant at Wild Wing Café (Coleman Blvd). Please bring your family, friends, and finds!

Artifact ID Workshop

SDAMP will be conducting an Artifact Identification Workshop in Columbia on August 25th. This workshop will run from 9am-5pm and cover a wide variety of artifacts found in SC

waters. Cost is \$30 to attend. To sign up for this workshop or for more information, please email deming@sc.edu.

Lecture Series

SDAMP will be hosting another great lecture series each Wednesday night in October. Join us for 4 great lecturers as they discuss the War of 1812.

Oyster Roast

SDAMP is thrilled to announce we will be having our 2nd Annual Oyster Roast on October 13, 2012. We'll keep you posted with all of the exciting details closer to the event.

Archaeology Day

Join archaeologists from around the state in celebrating Archaeology Month during the month of October. Events will be happening all over the state with the culminating event of Archaeology Day on October 20th at Santee State Park. More info to come.

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. ■

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](https://www.facebook.com/sdamp)! Leave a message on our wall!

April

- Ashley Deming presented on SDAMP's cannonball conservation project at the ASSC annual conference in Columbia on April 14th.
- Ashley Deming and Carl Naylor visited the Hilton Head Island

Chapter of ASSC on April 17th to present about the program and maritime archaeology in SC.

- SDAMP hosted an Artifact Identification Workshop to College of Charleston students and faculty on April 21st.
- Wing Night was held on April 25th in Charleston.

May

- From April 29-May 11 SDAMP conducted our Allendale Project. Please see Page 1 and the Features section of this newsletter for articles relating to that project.
- SDAMP visited James Island Middle School 6th grade classes on

Charleston Day to talk about prehistoric archaeology in Charleston.

- May Wing Night in Columbia on the 23rd was a great success with 50 attendants.

June

- On June 5th, SDAMP visited the wreck of the Helen B. on Daniel Island with finder Doug Boehme and Channel 2 to cover a short story on the wreck. Visit <http://www2.counton2.com/news/2012/jun/05/shipwreck-daniel-island-causes-city-change-plans-ar-3922154> for the news report.

- SDAMP's Ashley Deming and Intern Mike Slot attended

Pirate Day at the Charleston Museum and discussed the Archaeology of Piracy.

- SDAMP held Part I of their Field Training Course for 11 students over June 23-24. See Page 2 for details.

Upcoming...

July

- Field Training Course Part II July 12-15.
- SC State Museum Roadshow July 21st.
- Wing Night July 25th in Charleston.

August

- Artifact Identification Workshop August 25th.
- Columbia Wing Night-TBD. ■

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 2012 goes to diver Dennis Coco (#3946). For the last three years Dennis has joined his fellow Dredgeheads at our Allendale Project. Each year Dennis has been the go-to guy for

all of the little engineering jobs we have had. Need to lash a platform to the pontoon? Dennis can do that. Need to figure out a better pulley system for the floating screens? He's your man. Don't have an extra hitch to tow your boat? Dennis does! Anything we needed help with, he was right there to lend a hand (and often equipment).

Dennis continues to stand out as one of our exceptional volunteers

and we appreciate everything he does for us. Thank you, Dennis! You are truly an inspiration to us all! ■



**Hobby Diver of the Quarter
Dennis Coco**

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 ■



**Hobby Diver Jim Hickman
2012 Allendale Project**

Join the Dredgehead Family!

By Carrie Miller, Hobby Diver #4265, Dredgehead

I am a DREDGEHEAD. There- I've said it! My name is Carrie Miller and I'm a REPEAT participant in the dredging operation at the Allendale project. My reason for writing is to encourage all hobby divers to find out more about this project and GET INVOLVED!! The first time I volunteered,

I really didn't know what was in store for me, then the second time... I knew ...and STILL signed up!!

The days start early: drink coffee, eat a little breakfast, pack a lunch, grab your gear and head to the water by about 8:30 am. Pull on your comfy warm wetsuit- you'll be in the water for an 8 hour day!

It takes a team to keep the operation running- acting as safety diver, manning the screens as the dredge produces, shuttling artifact filled screens to the volunteers on shore- as each person takes a turn at the suction end of the airlift or water dredge. It's an exciting day for everyone... each screen

full of sand and (stinky) mud may contain a treasure that was hidden for thousands of years! It's fun to 'ooh' and 'aah' as the artifacts are revealed!! Around 5pm, we pack up and head back to camp for snacks, showers, DINNER, and views of the days finds. Make sure to rinse out

(Continued on page 5)

Dredgeheads (Continued from page 4)

the wetsuit...remember you've been in it for 8 hours!! Finally, yippee, crawl into tent, sleep, and repeat. It's a

lot of "work" but you hit that pillow satisfied (or already asleep). Dredgeheads start as a team then become

family. Join ours!! P.S. You can leave the underwater camera at home ☺■



**2012 Dredgehead
Carrie Miller**

Reflections From a New Dredgehead

By Teresa Donelan, Hobby Diver #4361, Dredgehead

Reflection is probably not the best term to describe these thoughts because the water was WAY too muddy for a reflection. I tried to describe my experience as a diver participating in the Topper Project to a friend and the best analogy I could produce was diving in a mud puddle while wrestling a vacuum cleaner on steroids!

Ahead of time I was told things like "Don't take your good gear," "Make sure you put a scum ball on your octo," "It will tear up those new gloves you just bought," "Might as well put duct tape over your mask because you can't see anything," etc.

Having experienced the Cooper River where visibility can be very poor, currents can be very strong and there are logs, mudballs and other hazards, I figured I would be somewhat prepared for this. I wasn't.

When they say zero visibility, what they really mean is that the vis is about minus thirty, which is cool until they hand you a 40 lb hunk of metal with a mind of its own. My first dive was a bit of a disaster if I do say so myself. I was underweighted. Actually, I was overweighted for a "normal" dive. I thought it would be enough

since there were no currents. Ashley was kind enough to loan me her ankle weights, one of which I promptly dropped. I burned air for about 5 minutes recovering that before I was able to dive. Ankle weights weren't enough, so I wrapped my legs around a tree! The weight scheme I was using by the end of the week was the amount I would wear for heavy currents in the Cooper River plus 10% and that still wasn't quite right. I may have to come up with some bronze knee pads for next time!

Part of the issue with operating the dredge was figuring out how to hold it. Unwieldy is a reasonable description when it's off, but once it has been turned on, it pretty much goes where it wants (which was never where I wanted.) I finally settled on gripping the end of the tube with my fingers curled inside the pipe. This was both good and bad: good because it prevented clogs; bad because the clogs were generally caused by large rocks, which were smashing into my hand

since they couldn't fit in the tube. We call that taking one for the team. ☺

I had other issues as well. The dredge tried to suck the scum ball right off my octo. I dropped my (borrowed) weight belt and had to recover it (in -30 vis). My octo free-flowed a few times. A stick tried to beat me up. Someone took my lunch out of the cooler and it didn't make it to the dive site. In spite of all that, it was a great experience. My dive buddies pitched in and shared their lunches to replace my lost lunch. It was exciting to hear the "land people" cheer Carrie for her remarkable finds on the dredge. The camaraderie built by going through an experience like this is something to treasure. I logged 7 dives to a maximum depth of a whopping 9 feet, burned a lot of air, hauled a ton of tanks, made some great friends and I'm a better diver for it. Many thanks to Ashley, Carl, and Joe of SCIAA for affording me this opportunity. ■



**New 2012 Dredgehead
Teresa Donelan**



**New Dredgeheads
Teresa Donelan
and Donnie
Edwards at the
screens**

Research at the Topper Site

By Jessica Phillips Bogstad, Honorary Dredgehead

For the past two summers, I have had the opportunity to work with an amazing group of divers and people during the Southeastern Paleoamerican Survey's archaeological field program. This public archaeological project takes place in Allendale County, SC over a span of five weeks. During the first two weeks of the project, a dredge recovery operation takes place within the Savannah River drainage system. I first became interested in the dredge and how it operates after hearing about the experiences my mom and grandmother have had while volunteering at the dredge site. While my mom and grandmother do enjoy participating in the terrestrial aspects of the

Topper site, the dredge has certainly won over their hearts. Working at the dredge site is particularly exciting due to the instant results seen as the artifacts are being lifted up from the bottom of the river. While working on the dredge, I learned: methods used in underwater archaeological studies, some lithic identification, and that diving was definitely an interest of mine. A few months after my first experience working on the dredge, I became a certified diver.

This past May, I also began working on an independent research proposal. The subject of my proposal is to conduct a dermatoglyphic study at the Topper site. The basic goal of this study is to search for evidence

of human activity in the form of fingerprints on pre-historic artifacts. In order to do so, I will be examining lithic (stone) artifacts for evidence of latent fingerprints. I will also be examining pre-historic pottery for evidence of impression fingerprints. While working at the Topper site and at the dredge site, Topper presents many great networking opportunities. As a result of networking at the site, I met a retired law enforcement officer who has already assisted me tremendously with my project, and has offered to further help me with the analysis process of the project.

Whether working as a "Dredgehead" at the dredge site, or digging terrestrially, volunteering at the Topper site is a

beneficial experience for anyone. Not many opportunities exist where professionals, students, and volunteers from the public are able to work together and learn from each other. For more information on the Topper site, visit allendale-expedition.net/ ■



**Honorary Dredgehead
Jessica Bogstad**

My Lowcountry Diving Experience

By Carl Naylor, SDAMP, ex-Hobby Diver #983

I don't know about you, but I thoroughly enjoyed Ashley's and Mike's telling of their first hobby diver adventures in this year's newsletters. It reminded me of my first dive in a Lowcountry river. It was 1980 and the river was the Edisto.

I was prepared. I had a brand new horse collar BC, a used regulator I bought at a local pawn shop, and a borrowed wet suit that didn't smell too bad. I was also certified and licensed. My new PADI Open Water C-card and SCIAA-issued Hobby Diver License occupied honored places in my wallet. Yep, prepared--and eager.

As I donned my gear on the deck of the dive boat, I imagined the treasures I was about to find, the shipwrecks I was about to explore, and the encounters with submerged wildlife I was about to experience. Convinced I was following in the fin kicks

of Jacques Cousteau, I back rolled into the waters of the Edisto.

Five minutes into the dive, now accustomed to the strange river environment and feeling happier than a clump of oysters at high tide, I caught movement out of the corner of my mask. Something was coming toward me from up current. I had only a moment to realize it was our small--too small, apparently--Danforth anchor. It had broken loose from the bottom and was now bouncing along the hard marl.

Should I get out of its way and let it go on by? Should I grab it and try to reset it? I decided to grab it and reset it in the next available anchor hold. Jacques would have to wait.

Snatching the anchor, my ride along the river

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First Dive (continued from page 6)

bottom began. As I rocketed down river while looking for something suitable to hook the anchor to, I noticed a small gravel bed off to my left. I was sure I saw the outline of a six-inch meg tooth whiz by just out of reach.

We (me and the anchor) then entered a sandy stretch of river bottom. Okay, I thought, the anchor should find something to catch on in the sand. Wrong. Instead, the anchor plowed a deep furrow through the sand. I wondered if this would be considered using mechanical means to dig for artifacts and fossils—something I agreed not to do in my Hobby Diver License application. Probably not, I reckoned. We then left the sand and were back on a hard marl bottom.

After what seem like the entire life span of a clam, but I'm sure was only a minute or two, of bouncing my butt along the inflexible river bed, I decided to put some air into my new BC. Adding just the right amount should keep the river bottom and my bottom adequately apart. I pressed the inflator button and felt my horse collar BC puff up slightly. I let go of the button, but air continued to enter the BC. The button was stuck! Before I could do anything about it I began to lift off the bottom and, still holding the anchor, started rising toward the surface. I porpoised into the sunlight and noticed two things as I managed to unstick my inflator button: our dive boat was still blithely drifting down river with no sign of life aboard and another boat was headed our way.

A man was at the helm, a woman stood next to him, and a young girl of about five or six sat in the stern wearing an overly large orange lifejacket. Behind the boat, a boy in the eight to ten year old range rode in a tire inner tube, gleefully crossing back and forth across the wake.

I figured they saw our boat, but wasn't sure they saw me, so I frantically started to wave. As the boat went by I don't think the man and woman noticed me, both were looking ahead of the boat, but I knew the little girl did. The wide-eyed look on her face said it all. Slowly she raised one hand and cautiously waved back. Turning my attention to the boy I realized he had crossed the boat's wake and was unknowingly heading straight for me. Before I could find the BC's deflator button and get back below the surface, the inner tube slammed into one of the anchor flukes I was holding, sending the boy rocketing at least six feet into the air. *Oh my God, I've killed him*, came to mind. The boy did an airborne cartwheel, miraculously landed back down in the inner tube, and continued on, apparently uninjured and none the worse for wear. He looked back at me as I continued drifting down river. He had a horrified—"A river monster just attacked me"—look on his face. The little girl apparently enjoyed the boy's encounter with the

anchor more than he did. When I looked at her, she was still waving, only now there was a devilishly large smile on her face. The man and woman, their attention still ahead of the boat, never saw a thing.

Nevertheless, it was time to get back down to the bottom. I hit the deflator button and began to sink. As I descended I looked down, hoping to see the bottom before I landed. But instead of the bottom a wooden structure came into view. I realized it was a shipwreck of some kind. I passed over a square end and then over the hull, ship timbers plainly exposed. *Where was that treasure chest full of rubies and diamonds?* Then I passed over another square end. Oh, just an old barge.

Just an old barge! Maybe it wasn't a treasure ship full of rubies and diamonds, but it was part of the history of the Edisto River and by extension part of the history of South Carolina. Perhaps it had hauled lumber to sawmills in Charleston, or the cut timber and iron rails from Charleston upriver to build the railroads that opened up the state prior to the Civil War, or who knows what else. If only the barge could talk. Maybe the archaeologists at SCIAA could get a story or two out of it through their research. I decided to include it in my report to the Institute.

Finally, a log appeared out of the gloom and I managed to firmly snag the anchor under it. I grabbed my gauges to see how much air I had left. I was down to 550 psi. With the 500 psi end-of-dive rule in mind I thought about surfacing. Then I thought: *Are you kidding? I still have 50 psi left!* I might still find a record meg tooth or perhaps an intact old bottle.

So, I decided to drop over to the other side of the log (out of the current), and poke around for treasure. What I came across had me instantly backpedalling, or backfinning, to be more precise. There, stuffed under the log, was the carcass of a deer. Now, I'm no marine biologist, but I knew how that had gotten there. Some alligator had stored it there for its next meal. Not wanting to be the appetizer, I headed for the surface.

Climbing back into the boat, I found the boat captain, Phil Burke of Walterboro, sitting in a folding lounge chair on deck nonchalantly munching a sandwich. I told him about my harrowing ride along the bottom (and surface) with the anchor, about the old barge and the alligator meal, and how I finally got the anchor secured again. "I figured the anchor would catch sooner or later," he said between bites. Shaking my head, I stowed my dive gear and reached for my cooler.

Some amount of time later we tried to retrieve the anchor, but found it steadfastly attached to the log. "You're gonna have to go down and unhook it," Phil announced.

Jacques Cousteau, indeed. ■

Preserving Our Historic Dive Sites

By Sam Templeton, Hobby Diver #5092

Did you know that some of the most interesting structures of the last 100 years or more are becoming popular dive sites? Lake Murray (near Columbia, SC), for instance, has several interesting underwater structures of its own. Among many others, the Wyse Ferry Bridge is one of these popular dive sites. Although the ravages of time still take their toll, relative cold, stillness and low oxygen content of some sites serve to protect them. The Wyse Ferry Bridge, a steel bridge dating from 1911, would have likely rusted away completely by now if still above the surface. Lake Murray's steel bridge, though slowly deteriorating, still sits proudly across the old riverbed.

Not all sites are

as well preserved. As more and more divers gain access to some of these historically unique underwater locations, it becomes even more important to consider the preservation of these irreplaceable treasures. Some of the structures can be quite fragile. As divers, we need to make sure that we are proficient enough not to have negative impacts on these sites. One consideration to make is buoyancy control. Poor buoyancy control can cause one to bump into and damage these sites. We divers are also a curious lot. We love to poke our heads in and look around. Sometimes, though, our curiosity can cause damage to fragile structures. For example, exhaust



Wyse Ferry steel bridge

(University of South Carolina Library copyright © 2000, The Board of Trustees of the University of South Carolina)

bubbles seeking a path to the surface can damage weak or rusty ceilings. That rain of debris may look pretty, but it destroys the site we are trying to enjoy. When we dive these sites, let's consider their historical value. Leave sample collection to the archaeologists. Taking souvenirs only hastens

the demise of these special sites and in many cases is illegal.

These sites won't be there forever; so let's do all we can to enjoy them conscientiously. A popular motto for responsible divers has always been, "take only pictures and leave only bubbles."■

Radioactive Shark Tooth

By Jimmy Armstrong, Hobby Diver #3794

Several years ago Roy Neeley, David White and I were diving in the Cooper River one afternoon. Visibility was the usual five feet or so and the depth was about 37 feet. I was swimming along a compass heading across the river bottom on plain hard Marle when I happened upon a small fossil bed. Much to my surprise, there were several 3-5 inch nice teeth there. After I had picked them up, I

ventured about 4 feet away from the bed looking around. Suddenly, out of the darkness, I spotted a huge triangle shape on the marle. When I picked it up, it was a perfect 6 inch Megalodon tooth.

The next day I was proudly showing it off to my friends and relatives. My brother wanted to take it to work and show it to some of his co-workers, who are also divers.

Somewhat reluctantly, I let him take it, telling him "That tooth is the find of a lifetime; don't let anything happen to it." Well, he works at a Nuclear Facility and carried it inside in his lunch box, where he showed it to his entire crew. The excitement started that afternoon when he was leaving the facilities. It seems that everyone must pass through a radioactive detection device before they can leave the

premises. As he passed through it, all the lights flashed, bells and alarms went off, and a guard stopped him! It appeared that he was contaminated with radioactive material! A closer examination determined that the radiation was coming from his lunchbox. Guess what the source was? Yep, it was my prized Meg tooth. The rules there do not allow ANY radioactive

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Radioactive (continued from page 6)

material to leave the building, so they seized it for testing. He was sure he had lost my trophy Meg tooth. And me? I was upset that it was gone.

A few weeks later, the tooth was

returned to him with a detailed analysis for the Isotope's it was emitting. It was harmless. It seems that over the millions of years of being buried in the sediment, it had accumulated radioactive

material. Who would have guessed that we have radioactive shark's teeth in the Cooper River in Charleston S.C?■

Radioactive Meg Tooth



Over 3 Inch SC Great White Shark Tooth

By Greg Borts, Hobby Diver #4749

On April 26, 2012, I decided to go dive in the Edisto River. Upon my arrival, I saw that the current was ripping and yes, the water was cold, but I was going to brave the elements in order to get in my first dive of

the year. I actually only brought one tank since I didn't get to the river until after twelve. Well wouldn't ya know it? I get ready to dive and my tank gauge showed I only had 1000 lbs. of air! It must have not

been closed all the way. Well I was there and suited up so I jumped in determined to find something. Immediately, I saw how rough the cold current was as it pushed me down the river.

Well, I made my way to the bottom and started pulling myself along. I spotted some gravel and then some more. All I was finding were a few small shark teeth and some broken pottery sherds. So, I moved forward checking my air continuously, as I knew it was low when I got in. Then I saw a tooth lying upside down

on the bottom. I picked it up and thought I had a small Megalodon tooth until I looked closer and saw it was a huge Great White Shark tooth. I yelled out, "Wooahoo!" underwater and tucked it away. I was thinking this tooth must be 2-3/4 inches...I surfaced shortly after.

Once out of the water I measured the tooth...it was over 3 inches! 3 1/16 inches long by 2-1/16 inches wide. I couldn't believe it! Great White shark teeth over 3 inches long are a rare find. I'm glad I was lucky enough to find one!■



Great White Tooth

Diver Safety

Just One

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

Some time ago, both Divers Alert Network (www.DAN.org) and the Historical Diving Society (www.HDS.org) conducted membership drives called "Just One." The idea was that if each member of these organizations could bring in 'just one' new member, that would have a significant impact on membership growth. As it turned out, members of both DAN and the HDS talked to friends and acquaintances to convince them to support these organizations through membership. As a result, many new members of both organizations are enjoying their member benefits while knowing their support helps DAN provide the benefits it offers to the entire diving community and the HDS continue its mission to be the keeper

of diving history. Besides the benefits to both organizations, this was a clear demonstration of the power each of us has over our friends and acquaintances.

I'd like to take this opportunity to take the "Just One" concept and apply it to diving safety. As you know from DAN's statistics, there are approximately 1,000 cases of decompression illness (arterial gas embolism and decompression sickness) and about 90 deaths reported to DAN each year. When you read the case reports (from the Annual Reports on Decompression Illness, Fatalities and PDE, free downloadable files from the DAN website), you can see

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Just One (continued from page 9)

that many if not most of these accidents were preventable. The idea of this revised “Just One” campaign is that each and every “One” of us can make a difference in diving safety.

Well, what can each “One” of us do to make a difference?

- **Be as good as we can be through continuous learning.**

Our diving skills, both physical and intellectual, should be up to par before every diving experience. This includes recent familiarity with all our basic diving and critical emergency skills, as well as keeping up to date with new developments in equipment design, configuration and use. We can refresh and reinforce our diving skills by diving more and diving more often. We can also participate in continuing education courses. Diving courses help us improve our diving skills, and programs such as DAN’s first aid courses help prepare us be prepared to manage an emergency if something should happen. Lastly, we should use each diving experience as an opportunity to improve our buoyancy control and reinforce our skills.

- **Share information with others.**

It is always a good idea to learn from the experiences of others. Participating in dive clubs is an especially good way to not only share the social benefits of diving but also learn from the experiences of other divers. Sharing experiences, tips, and techniques we have learned can be an invaluable way of improving safety. Many clubs and other dive groups have initiated programs that encourage more experienced divers to share tips on diving and diving safety with less experienced divers. These “Experienced Diver Tips”, as they may be called, are solicited from all divers and posted on club, group or store internet sites. These tips can involve safety procedures and critical emergency skills or may just be helpful hints to make the diving experience a bit easier. One such tip that I have seen concerns the use of the logbook and recordkeeping: *“After each diving experience, note in your log book anything you learned that would help you the next time you went diving. Since buoyancy control and the use of weights is always a struggle for new divers, you may want to make note of the exposure suit you wore, the environment you were diving in (fresh vs. saltwater) and the amount of weight you needed to achieve neutral buoyancy. In that way, you’ll have an idea of how much weight you will need the next time you go diving under similar conditions.”* Overweighting is a chronic problem

and can certainly compromise safety.

When we talk with experienced divers, we find that most never waste an opportunity to learn and benefit from each and every diving experience. Most experienced divers love to share their experiences (more than just ‘sea stories’) and become mentors (‘mentor divers’) for those less experienced. In that way, everyone benefits from shared experience and knowledge.

- **Correct errors before they become problems.**

When you are gearing up, take a moment to review your buddies’ gear configuration. If you notice that something appears to be different, it is a good idea to stop and discuss it. In that way, you could correct a configuration error or you may just learn a new method of preparing or configuring your own equipment. Divers working together and communicating effectively during the equipment preparation phase of the dive can be an effective way of reducing errors that could compromise you and your buddy’s safety and enjoyment. I certainly would not limit this to just my buddy. If I am with a group of divers and happen to see equipment configured in a way that I have never seen before, I make a point of asking about it. Then I evaluate whether I think the reasoning behind the choice is a sound and safe choice for my style of diving and experience level. Being curious can be a real virtue in terms of diver education and safety.

The pre-dive phase of a dive should also include a “Head to Toe” or what I call a “Strap to Strap” (mask strap to fin strap, and everything in between) buddy check. It certainly is a lot easier and safer to correct minor equipment problems on the boat deck or shore than once you are in the water. After all, once in the water you want to spend every minute enjoying the experience rather than struggling to correct an equipment problem.

- **Promote a Culture of Diving Safety - Be a role model.**

Demonstrate to others your commitment to diving safety. Develop a pre-dive ritual/checklist that you use each and every time you dive. When others see how you prepare to make every dive incident free and see how much you enjoy the sport as a result, others will emulate you. Promoting a culture of diving safety is something we can all do. You and everyone around you will benefit from the commitment you have made.

So the next time you are preparing to enjoy this wonderful and exhilarating sport of ours, keep in mind that, if just one of us can make a difference in diving safety, just imagine what all of us can do working together, as is DAN’s vision statement, “striving to make every dive accident and injury free.” ■

Conservation Corner

How to Properly Display Artifacts

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

In the last *Conservation Corner*, we discussed how to properly store your artifacts by using inert materials that will extend the lifespan of your findings (*Quarterly Reporter*, Volume 3 Issue 1, April 2012). Similarly, when displaying artifacts inert materials should be used to avoid the off gassing of harmful compounds that could damage them.

Artifacts should be displayed avoiding

direct sunlight, extreme temperatures, and high humidity. When displaying artifacts you should take into consideration the weight distribution and possible weak areas that may need extra support. Avoid displaying artifacts in a manner that creates friction on fractured edges (Fig1) or that puts stress on the weakest points of an artifact such as handles, bottle necks, etc. (Fig2). Also,

avoid pressure points by displaying artifacts with uniform support that will evenly distribute the weight. Figures 5, 6, 8, and 9 illustrate a proper display in which proper support weight distribution and low stress are achieved. These display supports were created using polyethylene foam blocks and sheets, which are excellent and safe support materials. The blocks are easily carved using knives to

match the contours of an artifact. Smaller blocks can be used to fill gaps and make level irregular shaped artifacts. Artifacts should not be adhered to any support materials. Avoid using glues, which over time can become unstable releasing volatile organic compounds (VOC) that may harm the artifact. ■



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6



Figure 7



Figure 7



Figure 7

Figure 1: Improper display of a bottle. The friction of the broken edge against the rigid table top will eventually remove more pieces of the bottle.

Figure 2: Improper display of the same bottle. The zip tie produces an extreme load on the bottle neck which is supporting all the weight of the artifact.

Figure 3: Materials used to design a proper display.

Figure 4: With a pencil, the contour of the broken edge of the bottle was marked on the foam block. This contour was carved and the bottle inserted in it. A small block was used to level the bottle and distribute the weight. No glues or fasteners of any type were used. The weight of the bottle is enough to keep the blocks in place.

Figure 5: Properly displayed bottle.

Figure 6: Another type of display. The bottle is lying on its heaviest side and blocks were used around the neck to keep the bottle from rolling.

Figure 7: Improper display of a plate. The weight of the plate is concentrated on one side which could eventually lead to breakage. In addition, it creates a stress point in the center of the plate due to the support position.

Figure 8: The display could be as simple as setting the plate flat and, using as a support, foam board or foam blocks lined with polyethylene foam sheets or linen fabric. The weight is evenly distributed on the bottom of the plate freeing the rims from the load.

Figure 9: Fossils displayed in an acrylic box. The box prevents dust from accumulating on the objects and provides protection for very small objects such as these teeth and vertebrae. The box is lined with a polyethylene foam sheet to avoid friction between the fossils and the box. Acid free paper, linen or polyester padding can also be used to line the box and protect the teeth.

Paleontologist's Panel

Hobby Diver Summer 2012

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

Well, we're already at the end of the 2nd Quarter for 2012. Reading through the dive reports from the 1st quarter was actually pretty quick and easy this time - most of the reports come in with the "no recoveries" box checked. It took a minute but it finally dawned on me that maybe the water might have been a little too chilly January thru March for folks to dive. That said, a few cold-tolerant souls ventured into the water and came

up with some nice prizes (including big meg teeth). The water must be getting warmer because many of the 2nd quarter reports I've received document some type of recovery, mostly shark teeth and whale bones. Remember to send me your fossil reports whether you make recoveries or not, and even if you don't dive at all during a particular quarter. There's a new report form on the SDAMP website and it can be emailed, snail-

mailed, or faxed to me. Looking forward to learning more about your finds!

I recently scanned over a (long) list of research projects that I hope to complete over the next few years. As I went over the list, I also looked at the fossils that would form the basis of those projects. A few are going to be relatively easy to complete, but others are going to be more difficult. Some of the easy ones will include new records of species

for South Carolina (i.e., pond turtles and tortoises). The more difficult ones will include projects that document the entire range of species from a particular deposit - everything from sharks and bony fish, reptiles, mammals, invertebrates, etc. In addition to documenting the animals (and sometimes plants) that lived when the deposits formed, we'll be trying to determine what the ancient environment

(Continued on page 13)

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was like (ancient delta, river, offshore marine?). Most of these projects have important data associated with them that will be invaluable for any interpretations we make about the ancient sediments. The data includes detailed geographic and stratigraphic information – we know exactly where the fossils were collected from (which quarry, road cut, construction site, county, etc.) and also from which geologic formation the specimens originated (the bed or horizon within the ancient rocks and sediment that encloses the fossils).

Unfortunately, some of the more difficult projects to complete are those that will involve dive specimens that do not have this important information associated. Many, like the mammoth lower molar that I talked about last time, were simply picked up off of the bottom of a river, out of their geologic context, and their location was never recorded. However, that isn't to say that these fossils are scientifically useless. On the contrary, we can still, among many things, identify the species that the fossil represents, get some idea of the environmental conditions that prevailed when the animal was alive (woolly mammoth teeth might

indicate that temperatures were much colder than we typically experience here in SC these days), and have an idea of what animals ate (tooth shape can be used to infer if an animal was a browser, grazer, or omnivore, and isotope analyses can help determine more precisely what types of vegetation animals were eating). We may not have the precise geographic context as in exactly where the animals originally lived, but maybe we can pinpoint the county, or at least say the animals were here in SC. Although we may not have the geologic context, many of the fossils represent animals that lived during a particular geologic time interval, and if we can identify the species the fossil represents, we can determine its relative age; for example, the Oligocene Epoch (23 - 34 million years ago) or Pleistocene Epoch (11 thousand - 2.6 million years ago).

Sometimes specimens that were picked up off the bottom of a river contain clues that can help us determine their original stratigraphic context - you just have to know where to look for it. Most of the fossils you'll find have cracks or grooves or other openings in the surface, and these are perfect places to look for

hidden matrix (the rock or sediment that originally enclosed the fossil). These are areas where matrix penetrated but was too deep into the bone/tooth to be rubbed away as the fossil eroded from its original resting place. One specimen in our collection, a three foot long section of the lower left jaw of a baleen whale (see photo), was collected from the bottom of a river (we don't know which one) in two pieces. The interior spaces within this bone are filled with the matrix from the stratum that it eroded from. We can analyze the matrix and determine which formation the bone came from. If certain microfossils are present, we could put an absolute age on the specimen in terms of how many years ago the animal lived, and we could get an idea of how warm, cold, or deep the

water was. To me, fossils are things that we can use to learn a LOT about the history of the Earth. My goal, when I find a fossil shark tooth within a particular type of matrix, is to be able to say more than just "Hey, I found a shark tooth." In order to be able to say more, I need to study the anatomy and physiology of modern sharks and where they live, analyze matrix for clues as to the ancient environment it represents, and compare fossils of different types to one another. In doing so, I should be able to say, "Hey, I found the upper right anterior tooth of a 12 million-year-old tiger shark that was swimming around in 78° water that was only 60 feet deep, and it was probably eating anything it could get its mouth on." Happy hunting!■



Baleen Whale Jaw
(Photo courtesy of the SC State Museum)

Amer Announces Retirement

By Carl Naylor, SDAMP

We say goodbye to one of our own as Christopher Amer, State Underwater Archaeologist and head of SCIAA's Maritime Research Division (MRD), announces he will retire in August 2012.

Amer, who holds a Master's Degree in Anthropology from the Nautical Archaeology Program at Texas A & M University, took the reins of the SCIAA's

Underwater Archaeology Division in 1987 upon the retirement of Alan B. Albright. In 2003, the division's name was changed to the Maritime Research Division.

Amer's first project with SCIAA was the continuation and completion of the excavation and recording of the Little Landing Wreck, a Revolutionary War British gunboat sunk in the Cooper River below

Moncks Corner.

His next task was the daunting chore of rewriting the State's Underwater Antiquities Act. This law pertains to the management and protection of all the state's submerged cultural resources. One aspect of the new law, enacted in 1991, was the creation of the Sport Diver Archaeology Management Program (SDAMP). SDAMP was created to add an education and outreach component to the already existing Hobby License program.

Just a few of the other projects headed by Amer include:

-- the search for the flagship of the Lucas Vazquez de Ayllon expedition which is believed to have sunk coming into Winyah Bay in 1526. The Ayllon expedition was a failed attempt to begin a Spanish colony in South Carolina.

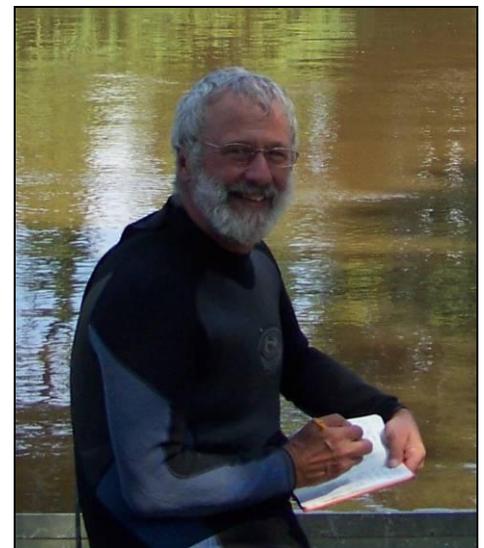
--The MRD

diving on the *Hunley* Project. This project allowed MRD to expand the state's research and management capabilities through acquisition of remote sensing equipment.

--the U. S. Navy shipwreck project. The major aim of this project was to conduct remote sensing operations on U. S. Navy vessels lost in South Carolina waters.

--and the C.S.S. *Pee Dee* cannon project which has located and hopes to raise the cannon from the C.S.S. *Pee Dee*. The Confederate gunboat was deliberately sunk in 1865 by the Confederates in the Pee Dee River near Florence, SC.

Upon retirement Amer will be leaving South Carolina and returning to Vancouver, Canada. Best wishes, Chris and good luck with all of your future endeavors. ■



SC State Underwater Archaeologist Chris Amer

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

This must be the year of the anchor this year! SDAMP has visited two locations already to record and analyze three anchors that were unintentionally pulled up from SC State waters. We want to remind everyone that shipwreck structure, fittings, and fastenings are illegal to remove for the water (this includes anchors). If you are unsure of whether an artifact is ok to remove, leave it in place and give us a call so we can determine it can be legal retrieved.

There are loads

of anchors all over SC that are already out of the water that you can learn from and enjoy. That said, SDAMP is thrilled to announce that we are now participating in the Big Anchor Project. This project was started by the Nautical Archaeology Society in the UK to record anchors that sit outside museums, restaurants, front lawns, etc from around the world! If we don't record them, the information will rust away to nothing. The project website offers tips on how to record

anchors, recording forms, and a database of all of the anchor info submitted by members of the public, just like you!

SDAMP is looking for individuals or groups that would like to help us with this project. For information on how to get started, email sdamp@sc.edu. For further info on the Big Anchor Project, visit www.biganchorproject.com and check out anchors from Australia to Canada!■



Grapnel anchor from the Stono

Useful Website Information

For more information on

SDAMP: www.cas.sc.edu/sciaa/mrd/sdamp.html

MRD: www.cas.sc.edu/sciaa/mrd/mrd_index.html

SCIAA: www.cas.sc.edu/sciaa

SCIAA publication *Legacy*: www.cas.sc.edu/sciaa/legacy.html