

SeaScripts



The Newsletter of the South Carolina Marine Educators Association



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Spring 2013



SCMEA

The South Carolina Marine Educators Association

Captain's Corner

President's Letter

First of all, I'd like to wish everyone a slightly belated Happy New Year, and I hope your 2013 is off to a great beginning! The changing of years, quickly followed by a changing season of renewal (yay, spring!) for me always signifies a fresh beginning, and SCMEA is no different-New Year, new President (me!?!), and new Board of Directors!

Our board is filled with dedicated, talented members from diverse backgrounds but we all have in common our love of the marine environment and a commitment to sharing with others what we know and care about so deeply. As marine educators, I wonder if any of us ever imagine what doors of possibility we are opening as we go about our daily lives?

I was reminded of this thought after the recent passing of an amazing scientist, educator, mentor, and friend, Dr. Richard F. Dame. Dr. Dame was my major professor and advisor at Coastal Carolina University and from the many classes and labs I had with him, I knew he was a wealth of knowledge. But as I see and hear the kind and thoughtful comments from his former students and colleagues about how much his guidance and encouragement meant to them over the decades, it brings home the incredible power we have to influence others to pursue and foster their own love of the marine world.

When I think of the paths that led me to marine education and the career I love, people like Dr. Dame immediately come to mind, and he was one of many that shared their knowledge freely and passionately. Each one of us also has this incredible opportunity every time we interact with a student. So next time you're out sharing your knowledge about the marine world with others, think of the impact you may never realize you're making and be proud to be a South Carolina Marine Educator!

I am very excited to be working with our fantastic board and wonderful SCMEA members over the coming months to further SCMEA's mission and I plan to dedicate my year as President to Dr. Dame-thank you for helping me find my path and share my passion!

For the Sea,

Beth



From Seeds to Shoreline Program: Meet *Spartina*!

E.V. Bell, South Carolina Sea Grant Consortium

For those of us who live on the coast, it's easy to take for granted the sea of grass that banks our tidal creeks and shorelines. After all, you have to work hard *not* to notice the salt marsh since it can be seen from most bridges, and if you can't see it, you certainly might catch a whiff of the pluff mud. These fields of *Spartina alterniflora*, or smooth cord grass, will transition from vibrant green in the summer to drab brown in the winter, continually providing the foundation for the salt marsh to be one of the most productive and important habitats in the world. Most of us know the benefits of the salt marsh: water filtration, shoreline stabilization, resting place for migrating birds, nursery for juvenile shrimp, fish, crabs and other species...but do you really know *Spartina*? Here are some interesting facts:



- * 3 species of *Spartina* are found on our coast: *S. patens*, *S. cynosuroides* and, the dominant plant in the low marsh, *S. alterniflora*
- * *Spartina* is a perennial and will die off in the winter before growing back in the spring
- * *Spartina* is considered a native species on the Atlantic coast and a non-native, invasive species on the Pacific coast
- * Produces small white flowers on the top of the stalk in the fall months
- * Periwinkle snails found on or near the *S. alterniflora* plant are grazing on microalgae, not eating the actual stalk
- * Can grow in freshwater, but has adapted to grow in brackish, salty water

by excreting salt crystals through special glands.



Although a common site, the salt marsh habitat faces negative impacts from pollution, coastal population pressure, and natural events (e.g. storms). It is therefore imperative that coastal residents have an appreciation and stewardship for this habitat. With this goal in mind, the South Carolina Sea Grant Consortium, Clemson Extension/Carolina Clear, and the South Carolina Department of Natural Resources launched the From Seeds to Shoreline program in 2010. This program uses the cultivation and transplanting of *S. alterniflora* as a springboard to teach K-12 students about the importance of the salt marsh. During the year, students and teachers collect, store and plant *S. alterniflora* seeds and then transplant their seed-

lings to designated areas of the salt marsh in the late spring in hopes of creating new salt marsh habitat. If you are an educator interested in involving your students in this *free* program for the 2013-2014 school year, several one-day training workshops will be held:

- 1) June 25th: South Carolina Department of Natural Resources, James Island, SC
- 2) June 26th: Waddell Mariculture Center, Bluffton, SC
- 3) June 27th: Huntington Beach State Park, Myrtle Beach, SC

Attendance at one of these workshops is a pre-requisite to participate in the program. During the workshop we will provide background information, field-based excursions, and a starter kit/resources to launch this program with your students. For more information on the program or workshops, please contact EV Bell at Elizabeth.vernon@scseagrant.org or visit the website at <http://www.scseagrant.org/content/?cid=497>.





Florida A&M University



Summer Teacher Coastal Stewardship Program

Come learn about watersheds, water quality issues, wetlands, wildlife and more during a fun-filled, field-trip excursion along the Gulf of Mexico

Purpose

- Promote conservation and stewardship of the Gulf of Mexico and its resources
 - Provide tools to foster environmental literacy among K-12 students

Benefits

- Participate in hands-on environmental learning opportunities in classroom setting, lab and the field
- Engage in discussions with scientists and natural resource professionals
- Get trained on GLOBE protocols, Project WET, data collection and analysis
 - Interact with other teachers and share ideas
- Learn how to implement inquiry-based, hands-on activities that promote conservation and stewardship
 - Receive stipend and travel expenses

Open to K-12 science teachers

Program Dates:

June 17, 2013 - June 28, 2013

To apply, submit the attached application by:
April 12, 2013

For additional information, contact:
Kimberly Davis at kimberly.davis@famu.edu or
(850) 412-6515



2013 Marine Art Contest for K-12 Students



Herring Catch by Keegan Gilmore, grade 10, Nauset Regional HS

The 2013 Marine Art Contest is open to all students in grades K-12. The contest theme is "Amazing Ocean Creatures of Stellwagen Bank National Marine Sanctuary". The Massachusetts Marine Educators (MME) contest, co-sponsored by Stellwagen Bank National Marine Sanctuary, New England Aquarium, Provincetown Center for Coastal Studies, Whale and Dolphin Conservation and Stellwagen Alive, is free and open to all students from public, private and home schools. **The deadline is Thursday, April 25, 2013.** Download a copy of the [contest rules](#) or visit the websites of the [Stellwagen Bank National Marine Sanctuary](#) and [Massachusetts Marine Educators](#) for more in-

Also, winning entries (and many of the honorable mentions) from the 2012 MME Marine Art Contest are part of an exhibition that is touring in the Northeast region. The show is now located at the J.F.K. Federal Building in Boston's Government Center. The show will then move to the Salem National Historic Site Visitor Center in March, the New Bedford Oceanarium in April and NOAA Fisheries Northeast Regional Office in Gloucester in May. All prize winners and honorable mention awardees are also posted on the Stellwagen Bank sanctuary website: <http://stellwagen.noaa.gov/>



For a copy of the 2013 calendar featuring art from the 2012 MME Marine Art Contest is now available from Stellwagen Bank National Marine Sanctuary. Download a copy of the calendar here: http://stellwagen.noaa.gov/news/pdfs/art_calendar2013.pdf

New Member Benefit: Discount tickets to Georgia Aquarium!



SCMEA now has its own webpage to purchase Georgia Aquarium tickets for 20% off. This includes general admission and several of their interactive programs as well. Check it out at: www.georgiaaquarium.org/scmea





2013 GREEN EGGS & SAND Horseshoe Crab Teacher Workshop Savannah Georgia

Where: University of Georgia Marine Extension Service, Skidaway Island, Savannah, Georgia

When: Friday, April 26 (starting around 5:30 PM) through Sunday, April 28 (ending around 12 PM), 2013

Who to contact: Dodie Sanders (912) 598-2340; sandersd@uga.edu for registration form.

Fee: \$90 per person

Logistics: Meals (Friday dinner, Saturday breakfast, lunch, and dinner, Sunday breakfast), education fees, lodging (if needed) on site (Fri./Sat.), workshop sessions, education materials and GEAS t-shirt all covered by the \$90 registration fee.

More about the workshop: The Green Eggs & Sand workshop, co-sponsored by Sapelo Island National Estuarine Research Reserve (SINERR), starts Friday evening, April 26 and ends around 12:00 PM on Sunday, April 28. Interspersed with expert presenters on horseshoe crabs (HSCs), shorebirds, biomedical use of HSCs, and HSC management, are sessions that explore the 2013 GEAS curriculum and provide demonstrations of the rich assortment of hands-on activities it offers. A site visit to view spawning horseshoe crabs is a special highlight of the weekend.

More about the lodging: Dormitory style housing is provided by the University of Georgia Marine Extension Service and space is very limited! Please indicate if you require housing, along with any special dietary restrictions in the spaces below.

Other important information: Space for the workshop is limited and registrations are made first-come-first-serve. No-shows or cancellations made without at least 2 weeks prior-to-workshop notice result in forfeiture of registration fees. **Full attendance at all workshop sessions is required for receipt of the 2013 GEAS curriculum package and workshop materials. Deadline for submission is April 8, 2013.**

E-mail Dodie Sanders (sandersd@uga.edu) for registration forms.



The Edible Estuary

You will need:

Cake or brownie pan	Vanilla wafers or sliced sponge cake (BEDROCK)
Mixing bowl (optional)	Chocolate pudding mix and milk (or premixed pudding) (SEDIMENT/MUD)
Electric mixer or whisk (optional)	Yellow sprinkles (SAND)
Large serving spoon	Oyster crackers (OYSTERS)
Small plates	Coconut (MARSH GRASS OR SEAGRASS)
Spoons	Chocolate chips (SNAILS)
Napkins	Fish crackers or gummy fish (FISH)
Plastic gloves	Golden raisins (SHRIMP)
Plastic baggies with twist-ties or Ziploc type bags	Stick pretzels (STARFISH)
Green food coloring	

Assembly:

It's probably a good idea to cover a table with newspaper or a disposable tablecloth and do the assembly on this. All students who are handling food should wear disposable plastic gloves.

Assign each child a component of the estuary (e.g. bedrock, mud, etc.). I hand out cards with the various components' names on them. You might want to add gummy worms, sharks or other items that seem appropriate. With the gummy fish and sharks, I have the kids stick one end of a toothpick in the gummy, and the other end in the "estuary", so the fish "swim" above the estuary.

Depending on the ages of the students, you may want to prepare the chocolate pudding ahead of time. Otherwise, have a couple of the students mix up the chocolate pudding in the bowl. Have another student pour some coconut into a baggie and add 3 or 4 drops of green food coloring. Make sure the bag is sealed, and have a student shake the bag until the coconut is green.

Explain that vanilla wafers (or sponge cake) represent the bedrock limestone below the sediments of the estuary. Have students place vanilla wafers in the bottom of the baking dish; make a second tier of vanilla wafers over about 1/3 of the dish to help create a slope. This will represent the gradient from the shore into the deeper parts of the estuary.

Have other students pour the chocolate pudding over the wafers (they will need to use a spoon to spread the pudding). This represents the sediment in the estuary. Have students add the other components of the estuary, in the appropriate locations:

- Sand (sprinkles) along the bank of the estuary
- Salt marsh (green coconut) along the "bank" of the estuary or sea grass scattered over the estuary bottom
- Snails (chocolate chips) in the salt marsh or sea grass; some around the edges of the banks
- Oysters (crackers) in patchy groups in the sediment; these should really be "attached" to bedrock
- Starfish (pretzels broken into pieces and arranged like arms) in the sea grass or on sandy patches
- Fish (crackers/gummies) and shrimp (golden raisins) scattered around the estuary

When the estuary is complete, review the components and their roles, then allow the students to become dredging operations and sample the estuary!

AQUACULTURE 101

BIOLOGY, CHEMISTRY & MATH TEACHER TRAINING WORKSHOP

Sponsored by:
Alabama Cooperative Extension System, Gadsden State Community College, Auburn University, and MS-AL Sea Grant



<http://www.youtube.com/watch?v=YfdVbvC28Po>

Aquaculture, or the reproduction and growth of aquatic organisms in a controlled or semi-controlled environment is a multi-faceted science that relies heavily on principles of Biology, Chemistry, Math and Physics. Please join us for this opportunity to learn more about aquaculture and some innovative opportunities to teach these principles in a real world setting.

When: June 10-14th, 2013. 9:00am to 4:00 pm daily

Where: Aquaculture Development and Education Center, GSCC
Gadsden, AL

Cost: \$249 to attend the workshop
This includes resources that previous teachers felt were worth \$400
(Travel and living expenses not included)

CEUs: 32 hours towards continuing education credits

Capacity: Due to the **hands-on** nature of the workshop seating is limited to 25 participants

Information: Contact Hugh Hammer (GSCC) at 256-549-8345
David Cline (AU) 334-844-2874
P.J. Waters (AU-Sea Grant) 251-438-5012

Topic Areas covered:

Biology: Catfish and tilapia morphology, internal and external anatomy, Fish culture techniques, Pond dynamics, Diseases of freshwater aquaculture species, Fish hatchery operation, Components and functions of a recirculating aquaculture system, Fish genetics - how to create a YY male tilapia, Aquaponics - Integrating fish culture and plant culture

Chemistry: We spend a whole day on water quality as it relates to aquaculture (Dissolved Oxygen, Alkalinity, pH, hardness, Unionized Ammonia vs. Ammonium, Nitrite, Temperature, Chlorides)

Math - Calculating: Volumetric displacement of small fish, Feeding rates, Growth rates, Feed conversion ratios, Tank and system volumes, Surface area of biofilter material, How to size a biofilter and Average weights
For more info go to www.alearn.info.

Meet new board member: Dr. Brandis Hartsell!

Name: Dr. Brandis Hartsell

Occupation: Department Head/Curator, Marine and Earth Sciences, Roper Mountain Science Center

Education: BS Anthropology/Archaeology, MA Educational Psychology/Marine Science, Ph.D Marine Science

First Job: Veterinary assistant

Favorite animal in SC: My cat, Lylah

Most unique animal you've seen: The horseshoe crab

Most unforgettable moment working in Environmental Education: Diving the reefs in the Red Sea to count spinner dolphin populations

Favorite Part about working in Environmental Education: Animals, animals, animals!

Most fulfilling part about working in Environmental Education: My work is a small, yet significant part of a world-wide effort to re-establish populations of endangered species

Funniest moment working in Environmental Education: No particular moment but in general, responses from kids

Favorite outside activity in SC: Scuba diving

Other talents/hobbies: Walking, biking, reading, gardening, creating displays at work

Where have you traveled: Europe, Virgin Islands, Peru (Amazon), Ecuador/Galapagos, Scotland, Egypt

Where you want to travel, and why: Mid-West, USA; I love the geography and geology

Something most people don't know about you: I was into weight training/body building in my 20's and 30's. Evidence of this no longer exists!



Sea the Gulf Join the Roux! 2013 NMEA Conference in Mobile, AL July 22-26

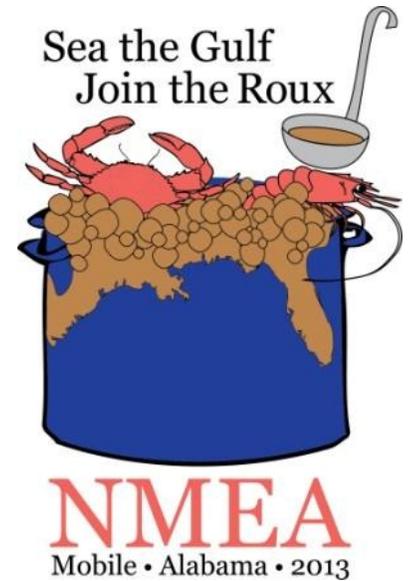
Apply for scholarships now through SCMEA!

SCMEA is taking applications for 2 Jacques Cousteau Memorial Scholarships (travel awards) for the summer conference. Come check out the Gulf, network and laugh with colleagues, and enjoy great sessions and keynote speakers such as Richard Louv. You can access the scholarship application at : <http://scmarineed.org/awards-scholarships/jacques-cousteau-award/>

Last year's award winners to the NMEA conference in Anchorage, Alaska were Rachel Herold from Charleston County Parks and Lindsay Thomas from North Inlet Winyah Bay NERR!!!

Applications are due April 1st! Award winners will be notified by May 15th

For questions or more information please contact Brian Thill at bthill@scaquarium.org or 843-579-8546.



Good Luck!!!

Early bird registration ends April 29th

<http://nmea.disl.org/>

Meet new board member: Lindsay Thomas!

Lindsay Thomas is the Education Specialist with the North Inlet-Winyah Bay National Estuarine Research Reserve, which is housed at the Baruch Marine Field Laboratory in Georgetown, SC. At the Reserve, Lindsay helps coordinate education and outreach programs and activities for K-12 audiences as well as the general public. Lindsay received her BS in Biology from Queens University of Charlotte in 2003. She began her Marine Science career working in aquatic animal husbandry at the Tybee Island Marine Science Center and the Riverbanks Zoo in Columbia, SC. During her time at Riverbanks, Lindsay got the opportunity to work in the education sector while leading behind the scenes tours of her galleries. She enjoyed this interaction with the public and showing them new, different things. So when she decided to move away from the public aquarium job, marine education was her top choice. While working at the Reserve, Lindsay gets to combine her two passions by working in marine education and also maintaining the aquatic animal collection at the Hobcaw Barony Discovery Center. Lindsay has been working with the Reserve for the past 5 years.

Lindsay is a member of the National Marine Educators Association as well as the South Carolina Marine Educators Association. She is also an active Sea Turtle Volunteer with the South Carolina United Turtle Enthusiasts (SCUTE).



Front Cover Photo

By Shelley Dearhart



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Teachers & Students Encouraged to Participate in Endangered Species Day (May 17)

The 8th annual national Endangered Species Day on May 17 offers biology, ecology, general science and other teachers an ideal opportunity to educate students about the importance of protecting threatened and endangered plant and animal species. In addition to classroom discussions, there are several ways they can participate in Endangered Species Day, such as:

- *Plan a school-wide Endangered Species Day fair with exhibits
- *Arrange a special display in the school library
- *Invite a local expert to speak to the school/class
- *Work with a community/environmental group on a habitat restoration project
- *Attend an event at a local zoo, aquarium, botanical garden or other location.



Depending on your school schedule, you can plan events earlier in May, on Endangered Species Day (5/17) itself, or that weekend. Once a specific activity is planned, the class can register it on the Endangered Species Day website (www.endangeredspeciesday.org). We want to provide all appropriate resources and other support for your event. Be sure to check out the new and updated materials in the Endangered Species Day Toolkit on the website, including event planning tips, stickers, bookmarks, fliers, banner, passport, coloring/activity sheets (many of which can be downloaded and printed) and more. The website also features a Teacher Resource Center/Teacher Forum.

For additional information, contact David Robinson, Endangered Species Day Director: drobinson@stopextinction.org

Meet new board member: Kate Hinman!

Kate Hinman graduated from Penn State University with a B.S. in Recreation, Parks and Tourism Management focusing on environmental interpretation and outdoor recreation. She feels extremely lucky to have been in the outdoor field since 2004. As an undergrad, she started volunteering at Shaver's Creek Environmental Center and then moved to the south for an internship at YMCA Camp Thunderbird's Environmental Education Center. Staying in the Charlotte, NC area, Kate worked at the U.S. National Whitewater Center for about three years leading teambuilding and supervising the ropes course. After moving to Charleston, she has worked for Middleton Place leading kayak trips in her favorite habitat (salt marsh), the City of Charleston Dept. of Rec. and has been educating at the SC Aquarium for 3 years. Kate loves interacting with guests and school groups every day, interpreting conservation by bringing animals out for visitors to meet, and mentoring high school interns. She spends most of her free time with her fiancé, friends and three dogs, Brewtus, Cali and Lila. Kate also enjoys cooking, hanging at Holy City Brewing, Pittsburgh Steelers football, Braves baseball, and anything outside!



SeaScripts is published and distributed on a quarterly basis. The submission of articles and announcements to the editor (khinman@scaquarium.org) is greatly appreciated and encouraged. To ensure that your submission is included in the proper issue, please observe the following deadlines:

Spring Issue - February 15th
Summer Issue - May 15th
Fall Issue - August 15th
Winter Issue - November 15th

Any materials that are not time sensitive may be saved and used in a future issue.