



Welcome to the newest online issue of *Scotch Bonnet*.

Hopefully, your summer plans will take you to a North Carolina seashore. If so, keep an eye out for sea stars, which are always a fun beachcombing find. Read more about these spiny-skinned creatures in my recent post (go.ncsu.edu/seastar) on North Carolina Sea Grant's *Coastwatch Currents* blog.

Thanks to Rachel Clark, Lauren Daniel, Liz DeMattia, Melissa Dowland, Paula Farnell, Jennifer Gilbreath, Jennifer Metzler-Fiorino and Renee Strnad for their contributions to this issue. Wishing you all a wonderful summer season!

As you explore this new issue of *Scotch Bonnet*, you will notice professional development opportunities and family adventures for everyone. Take advantage of these wonderful conferences, workshops and more, especially if you're working on your environmental education (EE) certification or gathering continuing education credits (CEUs). Keep reading for unique opportunities and ideas for educators. There's a lot going on in North Carolina and beyond!

Blue Heron Bowl Winners

nosb.org

The 2018 Blue Heron Bowl was held on Saturday, Feb. 2, in Wilmington. Hosts included the University of North Carolina Wilmington, the Center for Marine Science and the Watson School of Education.

Congratulations to Raleigh Charter High School for becoming Blue Heron Bowl champions for 2019! The North Carolina School of Science and Math took home second place, while Raleigh Charter's B team came in third. Manteo High School's team received the Sportsmanship Award.

The Blue Heron Bowl is a regional marine science quiz bowl. Two teams, each composed of four students and one alternate, square off against each other to answer questions related to marine science. Many of these students are coached by a marine science or general science teacher who sponsors their training. Each match consists of six minutes of toss-up and bonus

questions, followed by two team challenge questions, and ends with a final six minutes of toss-up and bonus questions. North Carolina Sea Grant is proud to be a long-time supporter of the Blue Heron Bowl.

Raleigh Charter's team went on to the national competition, which took place April 11 to 14, in Washington, D.C. Although they did not place in the top eight finishers, we at North Carolina Sea Grant are very proud of their efforts. Better luck next year.

The 2020 Blue Heron Bowl will be held on East Carolina University's Outer Banks Campus at the Coastal Studies Institute in February. Details will be available soon.

Education Update from N.C. Division of Water Resources

ow.ly/HayK30oU2GP

- What:** Project WET workshop
When: Saturday, June 15; 9 a.m. to 3:30 p.m.
Where: Walnut Creek Wetland Center, 950 Peterson Road, Raleigh
Cost: \$21, includes Project WET Guide
Credits: 6 contact hours, Criteria I (EE certification), plus 4 hours of homework = 10 contact hours
RSVP: reclink.raleighnc.gov, class barcode = #236850

Come join us as we share several activities that you can take back to your classroom. Not only will you learn about North Carolina's water resources, but you'll also learn how to implement fun, hands-on lessons to support your science curriculum. Best for third through ninth grade teachers.

Activity topics include how water resources are managed, watershed basics, how humans impact our streams and other waterways, and much more. Earn up to 10 hours towards EE Certification Criteria I. Come dressed to spend time outside. Bring a lunch and a refillable water bottle. Contact host Lauren Daniel, North Carolina's Project WET coordinator, with questions at Lauren.Daniel@ncdenr.gov.

Water Quality Training for Eastern N.C. Educators

bit.ly/WQregistration

- What:** Water Quality workshop
Who: Any middle or high school science teacher in eastern North Carolina

When: Wednesday, June 19; 9 a.m. to 4:30 p.m.
Where: Duke University Marine Lab, 135 Duke Marine Lab Road, Beaufort
Cost: FREE, but registration is required
RSVP: bit.ly/WQregistration

This water quality workshop is part of the Community Science Initiative at the Duke University Marine Lab (DUML) that aims to increase meaningful opportunities for local schools and the general public to engage in research. Over the past two years, DUML and the University of North Carolina at Chapel Hill's Institute for Coastal Studies have worked with teachers and researchers to create a series of hands-on water quality activities and experiments that are tied to our local community.

By attending this water quality workshop, you will have the opportunity to explore the activities and research projects, and then create a classroom plan that not only uses our water quality resources but includes field trips and classroom visits with local scientists. This workshop is for interested middle and high school science teachers in eastern North Carolina (including AP biology and AP environmental studies teachers).

Workshop objectives:

- To engage with educators around local water quality issues;
- To connect researchers and educators to local water quality research and work together to explore practical ways to incorporate water quality into the curriculum;
- To explore issues of local water quality, including what affects our local water quality and ways to empower students to make a positive impact on local water quality; and
- To design a classroom calendar for each teacher that uses the DUML Water Quality supporting materials (i.e., lesson plans for activities, classroom research projects and citizen science) within the N.C. science standards.

Professional Development Opportunities at Virginia Aquarium virginiaaquarium.com

The Virginia Aquarium's education department is offering several professional development opportunities during June. Each of these day-long workshops is free, but space is limited, so advance registration is required.

For additional information, or to register for any (or all) of these workshops, please contact Rachel Clark, school and youth programs specialist, at rriesbec@virginiaaquarium.com or 757-385-0275.

What: Climate Science
Who: Sixth through 12th grade teachers

When: Wednesday, June 19; 9 a.m. to 3 p.m.
Where: Brock Environmental Center, 3663 Marlin Bay Drive, Virginia Beach, VA
Cost: FREE, but spaces are limited

This teacher training focuses on the differences between weather and climate; how our climate system works; how our climate is changing and the effects; and student-focused solutions. Teachers will enhance their knowledge of the climate system and impacts through various hands-on activities, group discussions and demonstrations. Lunch is provided.

What: Wetlands & Watersheds
Who: Fourth through sixth grade teachers
When: Friday, June 21; 9 a.m. to 3 p.m.
Where: Classroom, Virginia Aquarium, 717 General Booth Blvd., Virginia Beach, VA
Cost: FREE, but spaces are limited

This teacher training focuses on how watersheds work and what role wetlands play in keeping water clean. We will explore a saltmarsh, where we will look at zonation patterns, identify plants and animals and take measurements. By using a trawl off our research vessel, we will get a closer look at animals in the surrounding habitat. Then we will finish the day with lab activities suitable for the classroom that help demonstrate watershed and wetland concepts. Bring a lunch. Wear comfortable shoes that can get muddy during our outdoor exploration.

What: Marine Mammal Science
Who: Third through seventh grade teachers
When: Tuesday, June 25; 9 a.m. to 3 p.m.
Where: Promenade Room, Virginia Aquarium, 717 General Booth Blvd., Virginia Beach
Cost: FREE, but spaces are limited

This teacher training focuses on marine mammals found along the coast of Virginia. We will begin with an introduction to marine mammals and classroom activities that highlight their anatomy, feeding structures and adaptations. We will enhance teachers' knowledge of marine mammals by searching for dolphins from our research vessel, going behind the scenes with our harbor seals and touring the Marine Animal Care Center. Bring a lunch. Wear comfortable, closed-toed shoes.

What: Sea Turtle Science
Who: Third through fifth grade teachers
When: Thursday, June 27; 9 a.m. to 3 p.m.
Where: Promenade Room, Virginia Aquarium, 717 General Booth Blvd., Virginia Beach
Cost: FREE, but spaces are limited

This teacher training focuses on the many types of turtles found in Virginia, including freshwater turtles, land turtles and sea turtles. We will provide instructions for hands-on activities to use in the classroom, hear from our stranding response team about sea turtle

strandings and finish with a behind-the-scenes tour of the sea turtle exhibit and Marine Animal Care Center. Bring a lunch. Wear comfortable, closed-toed shoes.

Guided Hikes in Nags Head Woods

tnc.org/nhw

What: Naturalist-led hikes
When: Wednesdays; 9:30 to 11 a.m.; June 19 through Aug. 7, weather permitting
Where: Nags Head Woods Preserve, 704 West Ocean Acres Drive, Kill Devil Hills
Cost: FREE
RSVP: No reservation necessary

Join the staff at The Nature Conservancy's Nags Head Woods site for a slow-paced nature hike, great for beginners or those wishing to learn more about the preserve. Learn about birds, butterflies, botany — and anything else along the way — and discuss the natural and cultural history of the area.

The hikes through the maritime forest will be about two miles; you may participate in all or part of the hikes. These events offer 2 contact hours for EE Certification Criteria II. Stay tuned to Nags Head Woods Preserve's Facebook page for pop-up programs and other events, such as specialty hikes, open houses and workshops: facebook.com/nagsheadwoods/.

Inaugural Women in the Environment Conference

cnr.ncsu.edu/admissions/women-in-the-environment-conference/

What: Women in the Environment Conference
When: Friday, June 28; 8:30 a.m. to 3:30 p.m.
Where: J.B. Hunt, Jr. Library, 1070 Partners Way, Raleigh (NC State University Centennial Campus)
Cost: FREE, but registration is required
RSVP: cnr.ncsu.edu/admissions/women-in-the-environment-conference/

The inaugural Women in the Environment conference, hosted by NC State University's College of Natural Resources, is an innovative educational event designed to introduce young women and individuals who identify as non-binary to potential careers in the environmental field, from forest management to paper science to engineering. Attendees will leave the conference empowered with the tools, knowledge and insight to be leaders for change and progress in a rapidly evolving world.

Priority will be given to community college students and rising 10th through 12th grade students who are considering majors related to the environment.

More information on how to register and a list of speakers and events can be found online at cnr.ncsu.edu/admissions/women-in-the-environment-conference/.

N.C. Museum of Natural Sciences Workshops

naturalsciences.org

Looking for professional development opportunities? Here are a few upcoming options from the museum. For information about additional teacher education programs, contact Melissa Dowland at 919-707-9898.

What: Microbiology on a Micro Budget
When: Saturday, June 29, and Sunday, June 30; 9 a.m. to 5 p.m. each day
Where: N.C. Museum of Natural Sciences, 11 West Jones Street, Raleigh
Cost: \$25 (includes lunch on Saturday, classroom materials)
Required: For educators only (recommended for high school teachers)
Credits: 16 contact hours towards CEUs or EE Certification Criteria III
RSVP: naturalsciences.org/calendar/educator-trek-registration/

Based on their research on salt-adapted microbes (halophiles), Duke University scientists Amy Schmid and Cindy Darnell have developed a program to engage teachers in current scientific content while emphasizing methods that minimize costs. During this two-day workshop, participants will perform low-budget experiments with high value, featuring a microbial growth assay with downstream mathematical and statistical analysis. Also included are other low-cost modules on a variety of microbiology topics, including ecology, antibiotic resistance, DNA extraction and bioinformatics.

So that participants can implement the learning module in their classrooms, they will receive activity kits, which will include protocols and a coupon for purchasing a *Halobacterium* growth kit from Carolina Biological. This workshop content is similar to the Microbes and Math workshop offered in 2017 and 2018.

Find more information at ow.ly/WnLn30oU2Ic.

What: Exploring Plant Genetics
When: Friday, July 12; 8 a.m. to 4 p.m.
Where: N.C. State Central Crops Research Station, 13223 US Business 70 West, Clayton
Cost: \$35
Required: For educators only (recommended for high school teachers)

Credits: 8 contact hours towards CEUs or EE Certification Criteria II or III
RSVP: naturalsciences.org/calendar/educator-trek-registration/

Spend the morning in the field with NC State University researchers discussing the techniques they use to search and test for improvements in crop plants. During the classroom portion of the workshop, participants will have the opportunity to try out several plant genetics classroom activities. Each participant will receive a voucher (value of up to \$200) to purchase supplies from Carolina Biological for teaching plant biology and/or genetics topics in their classroom.

Find more information at
naturalsciences.org/calendar/event/educator-trek-exploring-plant-genetics/.

What: Tall Trees and Wonderful Waterfalls
When: Tuesday, August 6, to Friday, August 9
Where: Joyce Kilmer Memorial Forest and other sites near Robbinsville
Cost: \$160 (includes camping fee, most camping gear, transportation and most meals)
Credits: 40 contact hours towards CEUs or EE Certification Criteria II or III
RSVP: naturalsciences.org/calendar/educator-trek-registration/

Join museum staff for a mountain adventure as you explore Joyce Kilmer Memorial Forest, one of the few remaining old growth forests in North Carolina. Explore mountain ecology and geology by visiting waterfalls, mountain streams and high-elevation balds.

Participate in hands-on activities and take time to reflect through sketches and writing. Camp beside a mountain stream, enjoy meals in the fresh air and end with evenings around a campfire. Most camping gear for this workshop is provided by the museum, and inexperienced campers are welcome!

Find more information at
naturalsciences.org/calendar/event/educator-trek-tall-trees-and-wonderful-waterfalls/.

Details about these workshops will be emailed to participants after registration is complete.

Summer Programs at Sturgeon City

sturgeoncity.org

Sturgeon City, a non-profit organization specializing in civic and environmental education, has several opportunities this summer for students and educators.

Elementary and middle school students can sign up for day camps. Each week features a different theme, such as time traveling, ocean exploring and more. For more information, visit the website or call 910-938-5079.

Ever walk on Sturgeon City's boardwalk during a summer night? What do you hear? Join the staff at Sturgeon City's Summer Night family program on Saturday, June 29, from 7 to 9 p.m., to learn about some of the insects and frogs that can be found on a summer nature walk around the area! The cost is \$3.00 per person, payable at the door. Register online at sturgeoncity.org/events.

What: Professional development workshop
When: Monday, July 1, and Tuesday, July 2; 9 a.m. to 4 p.m.
Where: Sturgeon City, 50 Court Street, Jacksonville
Cost: FREE; lunch will be provided to all participants
Credits: Full two-day workshop is approved by Onslow County School for 1.4 CEUs in science content for K-8 teachers
Day 1 = six hours of Criteria I or CEUs for EE Certification
Day 2 = six hours of Criteria II, III, or CEUs for EE Certification

Day 1 (July 1) will focus on Project WILD Aquatic. Our water resources are critical and require informed, responsible stewardship. Aquatic WILD uses the simple, successful format of Project WILD activities and professional training workshops, but with an emphasis on aquatic wildlife and aquatic ecology.

Learn the story of Sturgeon City on Day 2 (July 2). Join Sturgeon City staff to learn about the organization and their site, and take an in-depth look at several of their hands-on lesson plans.

Educators can sign up for both days of the workshop or for just one day.

For more information about any program, or if you have questions, email programming@sturgeoncity.org or call 910-938-5079.

Upcoming Project Learning Tree Workshops

forestry.ces.ncsu.edu/events/?q=PLT

Since 1976, Project Learning Tree (PLT) has been using trees as a lens into our natural and built environments to teach students "how to think, not what to think" about complex environmental issues.

For additional information about PLT, contact Renee Strnad at renee_strnad@ncsu.edu.

What: Project Learning Tree, K-8 Workshop

When: Thursday, July 18; 9 a.m. to 3:30 p.m.
Where: Rob Wallace Park, 12900 Bethel School Road, Midland
Cost: \$20 (lunch provided)
RSVP: go.ncsu.edu/ncplt_cabarrus
(registration deadline: July 12)

Join other K-8 classroom and informal educators as we explore activities in the PLT K-8 Curriculum Guide. Every participant will leave the workshop with this guide, which includes 96 activities correlated with the N.C. Standard Course of Study and Essential Standards.

The PLT activity guides are provided free of charge to participants through support from the N.C. Forestry Association. CEU renewal credits are available. This workshop qualifies for Criteria I in the EE Certification Program. Questions? Contact Tammi Remsburg at tremsburg@cabarruscounty.us.

What: Focus on Forests: PLT K-12 Workshop
When: Friday, Aug. 9; 9 a.m. to 4 p.m.
Where: Holmes Educational State Forest, 1299 Crab Creek Road, Hendersonville
Cost: \$20
RSVP: go.ncsu.edu/ncplt_holmes
(registration deadline: August 2)

Join other classroom and informal educators as we explore activities in the PLT K-8 curriculum guide and the secondary module, Focus on Forests. Participants will receive copies of both curriculum guides, which are correlated with the N.C. Standard Course of Study and Essential Standards.

The PLT activity guides are provided free of charge to participants through support from the N.C. Forestry Association. CEU renewal credits are available. This workshop qualifies for Criteria I in the EE Certification Program. Questions? Contact Amy Kinsella at amy.kinsella@ncagr.gov.

What: Environmental Experiences for Early Childhood
*with optional Facilitator Training on Aug. 13
When: Monday, Aug. 12; 9 a.m. to 3:30 p.m.
Where: Durant Nature Preserve, 8305 Camp Durant Road, Raleigh
Cost: \$20 (\$30 includes Facilitator Training)
RSVP: go.ncsu.edu/ncplt_durant
(registration deadline: August 5)

Environmental Experiences for Early Childhood encourages children ages 3 to 6 to explore, discover and communicate in expressive ways. With over 130 experiences that engage young children in outdoor exploration and play, this PLT program has been selected a Teachers' Choice Award winner by *Learning* magazine!

The PLT activity guides are provided free of charge to participants through support from the N.C. Forestry Association. CEU renewal credits are available. This workshop qualifies for Criteria I in the EE Certification Program.

If you are previously trained in the early childhood materials; work at the county level for early childhood staff training; or work at a college or university as a faculty member, please contact Renee Strnad, the N.C. PLT state coordinator, about attending the facilitator training (renee_strnad@ncsu.edu).

What: Project Learning Tree, K-8 Workshop
When: Monday, Aug. 19; 8:30 a.m. to 3:30 p.m.
Where: Belmont Abbey College, 100 Belmont-Mt. Holly Road, Belmont
Cost: \$20
RSVP: go.ncsu.edu/ncplt_bac
(registration deadline: August 12)

Join other K-8 classroom and informal educators as we explore activities in the PLT K-8 Curriculum Guide. Every participant will leave the workshop with this guide, which includes 96 activities correlated with the N.C. Standard Course of Study and Essential Standards.

The PLT activity guides are provided free of charge to participants through support from the N.C. Forestry Association. CEU renewal credits are available. This workshop qualifies for Criteria I in the EE Certification Program. Questions? Contact Renee Strnad at renee_strnad@ncsu.edu.

What: Project Learning Tree, K-8 Workshop
When: Saturday, Sept. 14; 9 a.m. to 3:30 p.m.
Where: Reedy Creek Nature Center, 2900 Rocky River Road, Charlotte
Cost: \$20
RSVP: go.ncsu.edu/ncplt_reedycreek
(registration deadline: Sept. 6)

Join other K-8 classroom and informal educators as we explore activities in the PLT K-8 Curriculum Guide. Every participant will leave the workshop with this guide, which includes 96 activities correlated with the N.C. Standard Course of Study and Essential Standards.

The PLT activity guides are provided free of charge to participants through support from the N.C. Forestry Association. CEU renewal credits are available. This workshop qualifies for Criteria I in the EE Certification Program. Questions? Contact Ariel Lowery at ariel.lowery@mecknc.gov.

What: Project Learning Tree, K-8 Workshop
When: Saturday, Sept. 28; 9:00 a.m. to 3:30 p.m.
Where: Agape Center for EE, 1369 Tyler Dewar Lane, Fuquay Varina
Cost: \$20
RSVP: go.ncsu.edu/ncplt_agape

(registration deadline: Sept. 20)

Join other K-8 classroom and informal educators as we explore activities in the PLT K-8 Curriculum Guide. Every participant will leave the workshop with this guide, which includes 96 activities correlated with the N.C. Standard Course of Study and Essential Standards.

The PLT activity guides are provided free of charge to participants through support from the N.C. Forestry Association. CEU renewal credits are available. This workshop qualifies for Criteria I in the EE Certification Program. Questions? Contact Mir Youngquist-Thurow at ACEed@agapekurebeach.org.

Educator Professional Development at N.C. Aquarium at Fort Fisher

ncaquariums.com/fort-fisher

What: Sea Turtle Exploration
When: Saturday, July 20; 9 a.m. to 3:30 p.m.
Where: N.C. Aquarium at Fort Fisher, 900 Loggerhead Drive, Kure Beach
Cost: \$25* (includes a behind-the-scenes tour and access to curriculum)
Credits: 6 contact hours toward CEUs; EE Certification Criteria I
RSVP: reservations.ncaquariums.com/fortfisher/Info.aspx?EventID=20

The North Carolina Aquarium at Fort Fisher presents Sea Turtle Exploration, a curriculum to help educators engage students in the fundamentals of STEAM through ready-to-use, standards-based lesson plans and sea turtles. Join the aquarium on Saturday, July 20, for a hands-on teacher workshop that will guide participants through the new curriculum — aligned with the new Common Core standards — and website.

Attendees also will learn about additional resources, such as weekly blog posts, that will be made available during the school year. Topics will include species profiles, aquarium staff spotlights, behind-the-scenes videos, new lesson plans and more. Students will even be able to follow the growth of aquarium hatchling sea turtles by visiting the blog each week.

Classes can “adopt” a turtle and learn about its care and growth. In addition, they will receive weekly updates with information on the turtle’s current weight and length. Each class will receive a certificate of participation as well.

Please bring a reusable water bottle. Participants can choose to pack a waste-free lunch, but the snack shop, Shark Bites, will be open, and there are lunch options off-site. This workshop will count towards EE certification (Criteria I) and consists of 6 contact hours that may count toward CEUs for teachers.

For additional workshop information, call 910-772-0546; for assistance with registration, call 910-772-0542. To register, please visit reservations.ncaquariums.com/fortfisher/Info.aspx?EventID=20.

*The Oak Island Beach Preservation Society will pay the registration fee for any formal or informal Brunswick County educators.

Environmental Educators of N.C. (EENC) Annual Conference

eenc.org

Join EENC for the 2018 conference at the Schiele Museum of Natural History in Gastonia from Thursday, Sept. 19, to Saturday, Sept. 21. Enjoy a conference full of professional development, networking, learning and field experiences that will help you expand your knowledge of EE and resources in coastal North Carolina and beyond.

Consider bringing your family and spending the weekend at the beach. Conference registration will open in late spring or early summer. Go to eenc.org for details. See you at the Schiele in the fall!

SciREN Triangle Set for September

ow.ly/EDY230oU2JA

What: SciREN Triangle and Educator Open House
When: Thursday, Sept. 26; 5 to 8 p.m.
Where: N.C. Museum of Natural Sciences, 11 West Jones Street, Raleigh
Cost: FREE


The SciREN Triangle Networking Event and Museum Open House is an information exchange night just for educators! This special night invites scientists and teachers from the Triangle/piedmont region to interact in a relaxed environment. The event showcases the wide array of museum programs and opportunities for both teachers and students available both onsite and offsite. Educators can preview exhibits and activities while working out the logistics of a school field trip; talk directly with education and research staff about on-site programs; and find out about distance learning, outreach and professional development opportunities.

Through a partnership with SciREN (Scientific Research and Education Network), educators also can meet more than 60 local scientists ready to distribute curriculum-centered lessons based

on their research! This is an excellent way to rejuvenate teaching methods, integrate relevant science with student learning, and connect with the community.

Save the Dates

There are many conferences scheduled for this year. Join your fellow marine educators and beach lovers at one — or more — of these great events.

 <p>National Marine Educators Association</p>	<p>National Marine Educators Association’s Annual Conference marine-ed.org/page/nmea2019 July 21 to 25 Durham, NH</p>
	<p>Environmental Educators of NC Annual Conference eenc.org/conference Sept. 19 to 21 Gastonia, NC</p>
	<p>International Sea-Bean Symposium seabean.com/symposium/2019/ Oct. 25 to 26 Cocoa Beach, FL</p>
	<p>Mid-Atlantic Marine Education Association Annual Conference mamea.org Nov. 1 to 3 Chincoteague and Wallops Island, VA</p>

Need to Contact Me?

If you ever have information to share with other marine educators, please don’t hesitate to send it my way for inclusion in a future issue of *Scotch Bonnet*. Let me know what you’re hearing from the sea!

Please share this website or newsletter with others — and share my email address with anyone who wants to receive a message when a new issue of *Scotch Bonnet* is available online. Thanks for all you do for students and for other educators!

Best Fishes!

A handwritten signature in black ink that reads "Terri". The letters are cursive and connected, with a prominent horizontal stroke at the top of the "T".

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