



Scotch Bonnet

What we are hearing from the sea.

Welcome to the newest online issue of *Scotch Bonnet*. This marine education newsletter also is available as a PDF, if you're like me and want to keep a hard copy.

By the time you read this issue, I'll be very near to my retirement date! After more than 35 years of service to the state of North Carolina (18+ with the N.C. Aquarium on Roanoke Island and 17+ with N.C. Sea Grant), I have many extracurricular projects on my to-do list and numerous beach walks in my future.

If you're curious to read some of my reflections on science in general, and marine education in particular, check out this Q&A in the Winter 2021 issue of *Coastwatch* at ncseagrant.ncsu.edu/coastwatch/current-issue/winter-2020/science-is-everywhere/.

Thanks to Sydney Brown, Megan Davis, Melissa Dowland, Elizabeth Joyner, Gail Lemiec, Harris Muhlstein, and Dana Thomason for their contributions to this issue. Wishing you all wonderful winter and spring seasons!

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 if you need continuing education units (CEUs). Even during this pandemic, there's a lot going on in North Carolina and beyond!

Newly Discovered Tool for Positive Microscope Experiences

foldscope.com

The MarineQuest team at the University of North Carolina, Wilmington, came across a cool scientific tool that they're excited to recommend to teachers and students: the Foldscope. The device is an inexpensive, portable microscope made of paper components, magnetic elements, and a lens. Strong enough to magnify a sample 140 times, the Foldscope is also resistant to wear and tear. The inventors' mission is to make science more accessible around the globe.

The following videos, created by MarineQuest, use a Foldscope to examine:

- The inner and outer layers of a surgical mask (echo360.org/media/52b6d7d4-f629-48d3-8e46-1b15659d6425/public).
- Prepared slides of plankton and a live sample collected from the intercoastal waterway off the research pier at the UNCW Center for Marine Science (echo360.org/media/1102069f-4066-4221-8834-2a5757a86cf6/public).

For more information on MarineQuest School programs, visit the MarineQuest website (uncw.edu/marinequest/schoolprograms/index.html). Feel free to contact Harris Muhlstein, the MarineQuest school programs coordinator, at muhlsteinh@uncw.edu, with any questions related to our program offerings and/or our Foldscope experiences.

N.C. Museum of Natural Sciences

naturalsciences.org

Free, Virtual Programs with the N.C. Museum of Natural Sciences

The museum offers a variety of free, virtual workshops for educators who want to help students explore the natural world in their own backyards. Each workshop includes a short introductory video and follow-up assignments to get outdoors and explore your “nature neighborhood.”

Do these sessions at your own pace — all the resources and materials are available on an ongoing basis. Receive credit towards CEUs or EE certification (Criteria 2). See the listing of topics and descriptions here: naturalsciences.org/learn/educators/online-workshops.

A new workshop, Insect Investigations, was added recently. Practice collecting and identifying local insects, create your own arthropod, and more!

Virtual Educator Trek: Early Childhood Dinosaur Science Discovery

Attend a free, virtual professional development workshop on Feb. 2, 4, or 11, from 7 to 8:30 p.m., to learn how to capture young children’s excitement about the latest dinosaur discoveries. Eligible teachers will receive dinosaur-themed science, math, and literacy materials together worth \$100 for their classrooms.

Book a Dino-mite Museum Experience for Your Students

We offer virtual dinosaur programs for 3- to 5-year-olds. Eligible classrooms can partner with the museum for a free, three-part dinosaur experience:

- A virtual dinosaur program with dinosaur-themed materials worth \$50 for your classroom.

- A virtual classroom visit by our paleontologist-in-training.
- An optional in-person family museum visit day. Families who come to the museum in downtown Raleigh or in Whiteville will receive dinosaur-themed goodies, plus \$15 in gas gift cards.

Dino Programs Eligibility: Any early childhood educator may participate in workshops or book a program, but those who meet the following eligibility requirements and participate fully will also receive materials for their classrooms and their students' families:

- Primarily teach preschool children ages 3 to 5 years old.
- Over 51% of your students come from low- to moderate-income (LMI) families. The LMI household income limit varies by county:
 - Wake and Johnston: \$67,445*
 - Orange, Durham, and Chatham: \$62,960*
 - Pitt: \$49,120*
 - Franklin, Nash, Edgecombe, and Wayne: \$42,540*
 - Cumberland and Pender: \$42,240*
 - Columbus and Robeson: \$41,840*
 - Bladen: \$25,900*

If you teach in another N.C. county, please contact jan.weems@naturalsciences.org for details. If you have any questions or would like more information about this initiative, please contact earlychildhood@naturalsciences.org.

Educator Treks with the N.C. Museum of Natural Sciences (In-person, Outdoors)

What: Nature Journaling in Your Nature Neighborhood
When: Saturday, March 6; 9 a.m. to 5 p.m.
Where: Cliffs of the Neuse State Park, Wayne County
Cost: \$25 deposit; returned, along with a \$25 travel stipend, upon completion of workshop

Examine ways to share the natural world with your students through nature journaling. Practice various journaling techniques as we explore plants and animals that can be found in most backyards, schoolyards, or local parks. Discover cross-curricular connections through activities that can be used in virtual and in-person classrooms.

To participate in this workshop, you must be a teacher, guidance counselor, media coordinator or assistant principal in a public school from one of the following counties: Beaufort, Bertie, Bladen, Chowan, Columbus, Duplin, Edgecombe, Gates, Greene, Halifax, Hertford, Hoke, Hyde, Jones, Lenoir, Martin, Nash, Northampton, Pasquotank, Perquimans, Robeson, Sampson, Scotland, Tyrrell, Warren, Washington, Wayne, Wilson, Vance.

This workshop is sponsored by the Simple Gifts Fund.

Health and safety precautions:

- Participants and instructors will meet at Cliffs of the Neuse State Park.
- All workshop activities will be conducted outdoors.
- Face coverings are required when social distancing is not possible.

What: Spring on the Millpond
When: Saturday, March 27, to Sunday, March 28
Where: Merchants Millpond State Park, Gates County
Cost: \$85 (includes camping fees, canoe rental, some meals)

Paddle across dark waters and between twisted trees, and leave your worries behind! Join us for a one-night canoe camping adventure on Merchants Millpond as we discover the wonders of the bottomland hardwood ecosystem. Take time for observation, reflection, and renewal as the first hints of spring arrive in the swamp. Participants are encouraged to bring their own sleeping bag, but the museum can supply most other camping gear you might need.

Health and safety precautions:

- Participants and instructors will meet at Merchants Millpond State Park in Gates County. The museum is unable to provide transportation at this time.
- Participants may bring their own tent, or the museum can supply one.
- Meals provided by the museum will be individually packaged.
- All workshop activities will be conducted outdoors.
- Face coverings are required when social distancing is not possible.

What: Teachers on the Trail
When: Friday, April 23, 12 p.m., to Sunday, April 25, 3 p.m.
Rain dates: April 30 to May 2
Where: South Mountains State Park, Burke County
Cost: \$125 (includes camping fees and most meals)

Join us for a backpacking adventure designed just for educators! Explore the ecology of the Blue Ridge foothills, discuss outdoor leadership, and learn backcountry camping skills. Expect strenuous hikes of up to 6 miles a day, with elevation gains of ~1500 feet, while you carry a full pack. The museum can supply most camping gear, but participants should have their own backpack (~50 pounds) and sleeping bag. (However, if you don't have a pack, sleeping bag, or pad, and you can't borrow or buy these items, let us know, and we might be able to help you out).

Health and safety precautions:

- Participants and instructors will meet at South Mountains State Park near Morganton. The museum is unable to provide transportation at this time.

- Participants may bring their own tent (you will need to carry it), or the museum can supply one; participants will not be asked to share tents.
- Meals provided by the museum will be individually packaged.
- All workshop activities will be conducted in the outdoors.
- Face coverings are required when around camp and when social distancing is not possible.

2021 Educators of Excellence Institutes (In-person, Outdoors)

What: Blue Ridge Institute
 Applications are due Monday, Feb. 15.
 For applications: naturalsciences.org/learn/educators-of-excellence-institutes

Participating educators will study and experience the wonders of North Carolina’s Blue Ridge Mountains. Join us as we traverse the Blue Ridge Parkway from Cherry Lane to Cherokee, exploring the wonders of this incredibly biodiverse region of North Carolina. Learn from scientists and other experts about the ecology, geology, history, and culture of the Blue Ridge. Connect with nature, gain experience in outdoor leadership, and build camaraderie with other outstanding educators as we camp at multiple sites during our adventure. Discover strategies for bringing the natural history of North Carolina to life in your classroom. During the trip, participants will provide daily updates to N.C. students via a blog.

When: This institute will be offered twice.

July 8 to 16

(Mandatory orientation meeting in Raleigh or virtually on March 13. Mandatory post-trip session in Raleigh on Nov. 6.)

July 29 to Aug. 6

(Mandatory orientation meeting in Raleigh or virtually on March 20. Mandatory post-trip session in Raleigh on Nov. 6.)

Where: Multiple sites in western North Carolina and Raleigh

Group Size: Limited to 8 to 9 participants

Activity Level: Moderate to rigorous, including camping most nights, walking and hiking on uneven terrain, and swimming and snorkeling in mountain streams.

Cost: \$400 (includes campsites and lodging, most meals, instruction, and supporting materials.) The museum can lend most camping gear if you do not have your own. To allow for social distancing and other safety protocols, participants will each have their own tent or room and will travel to each site in their own vehicle. At the conclusion of the institute, the museum will provide a \$200 stipend to cover transportation costs.

Health and safety precautions:

- Participants and instructors will travel to each site in their own vehicle. The museum is unable to provide transportation at this time.
- Each participant will have their own tent. Participants may bring their own tent, or the museum can supply one. For the final two nights, lodging will be single occupancy in yurts.
- The institute will be conducted almost entirely outdoors.
- Face coverings are required when social distancing is not possible and during any time spent indoors.

N.C. Aquarium on Roanoke Island

ncaquariums.com/roanoke-island

This winter and spring, the N.C. Aquarium on Roanoke Island is focusing its educational efforts on distance learning and virtual opportunities.

Programming

For distance learning programming featuring program titles like *Got Fur?*, *Back to Basics*, *Get to Know: Owls*, and more, visit reservations.ncaquariums.com/roanokeisland/Info.aspx?EventID=5. Contact outreach coordinator Rhana Paris at 252-475-2344 or rhana.paris@ncaquariums.com, or complete an outreach request form at reservations.ncaquariums.com/roanokeisland/CustomPage.aspx?Page=4.

Self-Guided Learning

On the Fun and Learning page at ncaquariums.com/roanoke-island-fun-and-learning, download coloring sheets, instructions for drawing animals, and puzzles, or check out a book from the aquarium's virtual bookshelf.

Animal Drop-Ins

Create a splash at a corporate meeting, birthday, bridal shower, or other event by having an animal drop in virtually. To schedule a virtual aquarium animal cameo presentation, contact education curator Dia Hitt at 252-475-2318 or andrea.hitt@ncaquariums.com.

Where Does the Waste Go? Exploring Ocean Circulation and Marine Debris Using NASA Data

mynasadata.larc.nasa.gov/lesson-plans/ocean-circulation-patterns-garbage-patches-story-map



**Don't miss the new
Google Forms, Docs,
and Jamboards!**



Using various visualizations (e.g., images, charts, and graphs) and NASA data, students can explore the connection between ocean circulation patterns and ocean garbage patches. Students will investigate the forces that contribute to ocean circulation patterns and how debris (especially plastics) travel from land to garbage patches. Students will also analyze regional plastic production and waste management data to describe how humans have contributed to ocean plastic pollution. This story map, targeted at middle and high school students, incorporates Google Forms and Jamboards to help make the virtual instruction engaging and fun!

Story Map Lesson Link: mynasadata.larc.nasa.gov/lesson-plans/ocean-circulation-patterns-garbage-patches-story-map

My NASA Data is part of the GLOBE Mission Earth “Science Activation” project (globe.gov/web/mission-earth), a collaborative of multiple institutions across the United States, formed to increase teacher-student involvement in the GLOBE Program and connect to NASA assets. Questions? Please contact My NASA Data, NASA Langley Research Center, larc-mynasadata@mail.nasa.gov.

N.C. Wildlife Loaner Boxes

ncwildlife.org

The North Carolina Wildlife Resources Commission is happy to loan educational wildlife boxes to N.C. educators. These loaner boxes will allow you to bring a little bit of the wild into your teaching space with no associated cost for teachers. Please see loaner box options below:

Magnificent Mammals - Grades 4 to 8

ncwildlife.org/Portals/0/Learning/documents/CCCWE/MagnificentMammals-LessonActivityPlan2.pdf

Materials included:

- 3 carnivore, 3 herbivore, and 3 omnivore skulls
- Laminated lesson plan
- PowerPoint
- Laminated skull diagrams
- Laminated species profiles for skulls
- Return shipping label

Dove Decoy – Middle and High School Sciences

ncwildlife.org/Portals/0/Learning/documents/CCCWE/DovePopulationEstimation-LP_July2020.pdf

Materials included:

- 28 dove decoys
- Return shipping label

If you wish to request a loaner box or would like more information, please email wrceducation@ncwildlife.org.

Save the Dates

Join your fellow marine educators and beach lovers at one — or more — of these great learning opportunities planned for the future.

