



Friends of Coastal South Carolina

Science Education Programs Adapted for social distancing during the COVID-19 pandemic

Supporting our National Forest and Wildlife Refuges
Founded 1996 as the SEWEE Association

While many of our usual programs are on hold during the COVID-19 pandemic, we are ready to teach and excited to offer a collection of environmental education resources for remote learning. As guidelines and circumstances progress, we may be able to begin offering field studies for small groups, when it becomes safe to do so.

*As always, if you have specific topics, environmental issues, species, or projects of interest, we are happy to design a virtual program to meet your needs. We want to continue to find ways for students to learn about and explore our public lands and become involved in their environments! Although most of our programs are designed for lower and upper elementary students, they CAN be adapted for higher grade levels. **As a service to our communities and our national forest and wildlife refuges, our programs are offered at no charge.** For scheduling and other questions please email us at educator@sccoastalfriends.org or call us at 843-928-3368.*

Single-Lesson Virtual Programming

(All programs can be adapted to any elementary grade)

Live Zoom Lessons

Bring our educator into the classroom with a live Zoom lesson! Each of these lessons will last 45-60 minutes.

Reptiles

Bring live reptiles to your computer screen! This program uses live reptiles to teach students to identify the characteristics and adaptations of a few of our favorite reptilians native to the Lowcountry. We will compare and contrast various types of reptiles, look at their unique adaptations, learn of their roles in our local ecosystems, and discuss ways we can help conserve these important animals.

Your Carbon Footprint and Climate Change

Ever wonder how your actions relate to climate change? This class focuses on climate change, global warming, and human impacts on the environment. Students will take a quiz to determine their own carbon footprints and learn how small actions taken by each of us can add up to big changes in the environment (both positive and negative). We'll talk about natural resources, conserving energy and water, turning our yards into good habitat, packing a waste-free lunch, and other practical ways we can help protect our local ecosystems.

Plastics: Reduce, Reuse...Recycle

Did you know the average American generates ~5 pounds of trash EVERY day? This class will discuss the environmental impacts of single-use plastics and other trash items. Students will first think about how much trash they throw away daily, how long it takes typical trash items to decompose in a landfill, and then brainstorm easy ways to reduce the amount of waste they produce. We will also discuss the pitfalls of recycling and why it is not a cure-all for our trash problems. In addition, we can lead a discussion in a letter-writing campaign to encourage the reduction of plastic in your school or community.

The Food Web

The Circle of Life! Students will learn how all living and nonliving things in an ecosystem depend on each other and how energy moves through an ecosystem. Following the virtual class, students can choose a South Carolina ecosystem to research and then create their own food web diagram posters. Upon completion of their food webs, our educator will return virtually and guide students through presenting and discussing their beautiful posters!

YouTube“Field Studies”

These programs will provide an inside look into our national forest and wildlife refuges. The programs will have follow-along worksheets or activities to keep students engaged during the 10-15 minute videos. Via Zoom, Google Meeting, or the like, our educator can follow-up these videos with a live Q/A session to answer any questions students may have after watching the videos. Our educator can also introduce the program to the teacher and/or class beforehand. Below is a list of current or planned YouTube “field studies”. If you have a specific standard or topic you would like us to address, we can create a program to fit your class’s interests and needs.

Nesting Shorebirds

Cape Romain National Wildlife Refuge (NWR) provides some of the most critical habitat along the southeast Atlantic coast for countless species of shorebirds. Students will learn about the adaptations of shorebirds, which shorebirds nest on South Carolina beaches, how they can help protect shorebirds, and “come along” for a day in the field as Fish and Wildlife Service and SC DNR staff work to protect shorebird nesting areas. This video is followed by a service project: students can design their own shorebird protection signs. Their sign may be used next year to help Cape Romain protect shorebird nesting areas!

Salt Marsh Flora

We can’t use saltwater on our house plants, so how can plants survive in the salt marsh? Students will learn about the many adaptations of plants living near the salt water as they follow our educator through the maritime forest and out into the saltmarsh.

Wood Ducks

Not all ducks quack! Students will learn about what sets ducks apart from other birds and the special adaptations of wood ducks. They will then learn from Waccamaw NWR Manager and Biologist, Craig Sasser, about the ways that Waccamaw NWR works to provide habitat for these beautiful birds.

Carolina Bays

Carolina Bays are an endangered habitat within the Francis Marion National Forest with unique characteristics and inhabitants. Students will learn about how these unique ecosystems formed and get an up close look at some of the plants that call it home.

Stranded Sea Turtle Rescue

What happens when a disoriented sea turtle gets stuck in the salt marsh? Get an insider’s look to see how a “Turtle Team” on Cape Romain NWR worked to rescue a loggerhead sea turtle stuck in the pluff mud back out into the ocean.

Carnivorous Plants in Carolina Bays

Plants that eat meat?! Carolina Bays within the Francis Marion National Forest are home to four rare species of carnivorous plants. Students will learn about carnivorous plants and get an up-close look at some of the carnivorous plants that grow in this ecosystem. Students will also watch as our educator dissects a carnivorous plant to see what is inside.



Fiddler Crabs in the Salt Marsh

Get ready to count every single fiddler crab in all of Cape Romain NWR! To begin, students will learn about the importance of fiddler crabs in the salt marsh ecosystem. Then, they will follow along as our instructor uses scientific estimation techniques and upper elementary level math skills to estimate the number of fiddler crabs in Cape Romain NWR using transects.

Prescribed Fire in the Francis Marion National Forest

Not all fire is the same. Educator, Kristen Mae is joined by Rocky Beery, the Assistant Fire Manager of the Francis Marion Ranger District, to discuss prescribed fire and why it is so important to the habitats of the Francis Marion National Forest and to protecting nearby communities.

Forest Ecology (upcoming)

Students learn about the unique features of our coastal forests and about the many adaptations of forest trees and plants. They can then follow along to learn how to identify local trees and plants through the use of a dichotomous key. Afterwards, you can take this activity outside and have your students practice their new skills—our educator will help plan this activity.

Freshwater/Pond Ecology (upcoming)

Local freshwater wetlands and their macroinvertebrate inhabitants are the focus of this program. The video will discuss the importance of macroinvertebrates and biodiversity. Students will then follow along as our instructor searches for different macroinvertebrates in the swamp and learn how to identify them using a dichotomous key. The video will also explain and discuss how scientists use macroinvertebrates to study the health of ecosystems.

Sewee Shell Ring (upcoming)

The Sewee Shell Ring is a prehistoric shell mound that is over *4,000 years old*. This video will explore the shell mound and discuss the history of Native Americans who inhabited this area.

Red Wolves (upcoming)

The red wolf is the world's most endangered wolf. The video will give students an up close look at the resident red wolves at the Sewee Visitor and Environmental Education Center. In addition to learning about this local endangered species, this video explores the human impacts on such species and the role we play in their decline and recovery. Students will learn about problems and threats to species and learn how losing a species changes an ecosystem.

Lowcountry Rice Culture (upcoming)

The growing and selling of rice made Charleston one of the richest cities in the world. This wealth was built on the technology, knowledge, and labor of African slaves. Students will learn how the history of rice culture shaped Charleston's economy and continues to shape Lowcountry geography. Several important, present-day habitats of ACE Basin NWR, Waccamaw NWR, and the Francis Marion National Forest were formed from historic rice plantations. This video will explore this history and its lasting ecological effects.

Exploring Bulls Island of Cape Romain NWR (upcoming):

Cape Romain NWR is a 66,000-acre estuary including 33,000-acres of designated wilderness area. Bulls Island is one of the most popular destinations in the refuge. This undeveloped barrier island contains saltmarsh, maritime forest, freshwater wetlands and beach ecosystems to explore.



YouTube Activities

These programs involve simple activities or experiments that introduce students to various environmental topics. Our educator can follow-up these videos up with a live Q/A session to answer any questions students may have after watching the videos via Zoom, Google Meeting, or the like. Some activities and experiments require a few materials for students to conduct them on their own (material lists can be found for free download on our Google Drive link). Below is a list of current or planned YouTube activities. If you have a specific standard or topic you would like us to address, we can create a program to fit your individual class's interests and needs.

Virtual Waccamaw Exhibit Hall Scavenger Hunt

Join Educator, Kristen Mae as she explores the "Tale of Two Rivers" (the Pee Dee River and the Waccamaw River) exhibit hall at the Waccamaw NWR. Students can follow along with our Scavenger Hunt worksheet. Students will be introduced to six major ecosystems of coastal South Carolina and the plants and animals that inhabit them.

Mammal Skulls

Learn to identify 12 different mammal skulls! Students will learn how to deduce information about a mammal's diet, sight, and sense of smell by observing various skull adaptations. Students will then learn how to use a dichotomous key to identify each mammal from its skull. Students can then follow along with Kristen Mae as she goes through each skull or they can use our Google Drive slide show to practice their new skills and identify the skulls on their own. Science skills are built through the use of measurements and dichotomous keys, as well as making observations.

Swallow-tailed Kite Paper Plane

A gracefully soaring, uniquely social raptor, Swallow-tailed kites are a site to see. Sadly, their nesting range has dwindled from 21 states to only seven and they are considered endangered in South Carolina. The Waccamaw NWR has South Carolina's highest density of nesting Swallow-tailed Kites. Students will learn about these amazing raptors and can then follow along to make their very own paper plane in the shape of a Swallow-tailed kite. After completing their planes, our educator can have a Zoom call to discuss force and motion. Students can then use their new knowledge and planes to have a flight contest to see whose Swallow-tailed kite can soar the farthest!

Wetlands Model (*upcoming*)

Did you know an acre of wetlands can absorb up to 1.5 million gallons of water? Students will learn about the importance of wetlands in filtering storm water and protecting our communities from flooding. Then students can follow along with an experiment using desk models with various soil types to demonstrate the functions and efficiency of wetlands. This program can also be offered as a Live Zoom lesson.

Citizen Science Projects

Citizen Science Projects allow your students to collect data that will help professional scientists working on global conservation issues. These projects are a great way to introduce kids to how technology can support conservation efforts and to teach about species of conservation concern.



Service Learning

We love when students give back to the environments they are studying and we are always up for helping classes with service learning projects. We can provide a virtual lesson and instructions to accompany any project you may choose. If you have a project idea, let us know what it is... we'd love to help brainstorm creative ways to make it happen! Here are some examples of past projects:

Habitat Enhancement/Restoration: Pick a species or ecosystem that your class is concerned about; research what can be done to help that species and then pick a project to help your species. Past projects have included: bat boxes, bird houses, shorebird protection signs, planting native plants, etc. Our educator can tailor a YouTube program or live virtual lesson to the project of your choice. These projects can be installed at your school and/or donated to enhance habitat on the forest or a wildlife refuge. Until students can safely travel to install projects on the forest and refuges, our educator can take video to show your class how their projects are being used.

Teach others about our wildlife: Students can research and create field journals (or posters) based on their favorite refuge and forest flora and fauna. They can present these posters to their class, or other students, to teach about the conservation challenges their species faces and what can be done to help. Our educator can "Zoom" in and assist with the presentations as well.

Fund raising projects: A lot of times, the best way to help is to donate money to a group who has the same interests as you. Past projects include – designing and selling cloth shopping bags with a note inside educating consumers about the dangers of plastic bags in our waters, and the importance of making sure your trash ends up in the right place; not in our ecosystems.

Make your schoolyard in to a great bird habitat: This project usually includes things like building and installing nest boxes/bird feeders, native plants that attract pollinators, water features, etc. around your campus or in other public places to create habitat for birds. Often this can also be started and continued as a research project: having students investigate what they can do to make a yard more hospitable habitat and compare wildlife observations before and after implementing their projects.

Resource Links

- YouTube Channel: <https://www.youtube.com/channel/UCo4LDaKmXhhGRRVP1BVoA2A>
- Google Drive: <https://drive.google.com/drive/folders/13btKDUqi42RMijgzW5NtgvzGyVU5k?usp=sharing>

*We ask that if you do use any of our resources, please send us a quick email (educator@sccoastalfriends.org) with: the **video you watched**, the **grade and number of students** that attended, and **any feedback** you may have. This information helps us improve our lessons as well as gives us details needed to apply for grants. Grants allow us to continue to provide free environmental education programs for years to come!*

Contact

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