



SEWEE Association, Inc.

Friends Group for the National Forest and coastal National Wildlife Refuges of South Carolina

This list is just the beginning of the programs we offer at Waccamaw Environmental Education Center. If you have specific topics, environmental issues, species, projects, or questions please don't hesitate to email us at sewee.educator@earthlink.net (or call 843-928-3368). We are always looking for new ways to get students outdoors and involved in their environments!

Environmental Education Programs

Each of these lessons will last about 45 minutes. Depending on your timetable and the size of your group, you can pick any two (groups larger than 30 students) or three (less than 30 students) of these programs for your students' visit. Or add one of the Additional Time activities to spend a complete day on one theme.

Note that LE are programs geared for Lower Elementary (K-3) students and UE are lessons geared toward the standards of Upper Elementary and Middle School Students

Bats, Black Bears, and Other Mammals

LE – Students investigate the diversity of mammals that utilize our refuge. We'll examine adaptations that help them survive and thrive along our rivers, and play a game to learn what factors may limit their population.

UE - By studying their teeth, students will learn about the adaptations of some of our local mammal species and where these mammals fit on the food web. Then students will learn to use a dichotomous key and compete to see who can identify the most skulls from mammals in our local ecosystems.

Conservation and Recycling

LE – Students will learn all about how their actions can both positively and negatively affect the environment. We'll talk about natural resources, conserving energy and water, turning our yards into good habitat, packing a waste-free lunch and other ways that they (as students) can help protect our local ecosystems. Then, we'll turn the focus to recycling as students learn the processes used to make new paper from old paper and even make their own little piece or recycled paper to take home!

UE – Students will calculate their ecological footprint based on their daily activities. Then we'll spend some time walking around our facility and discussing ways to reduce their daily footprint. We'll also discuss some opportunities they have to improve conservation habits of their school as well as ideas to make their homes, yards, and even schoolyards into better habitat for local wildlife.

Forest Ecology and Scavenger Hunt

LE – Students will hone their observational skills and discover some of the ways animals hide in plain sight as we hunt for the elusive "pipe lizard". Then, they'll learn about the many functions of our forest as they work in groups to complete a forest scavenger hunt on our onsite trails.

UE - In this lesson, the students are the botanists as they identify common trees on our onsite trail. Not only will students practice their observational skills as they learn about the food-webs



of our forest and wetland ecosystems, but they will also practice their analytical-thinking and problem-solving as they work in small groups to identify local flora using a dichotomous key. **Additional Time:** Make a food web – students use photos (of animals, tracks, dens, webs, etc.) that they take during the hike to create a model of the forest food web.

Orienteering

Students will learn the basics of using a compass by utilizing their simple math skills and studying degrees, angles, and directions. After mastering the basics, the class will set out on a compass course around our grounds and see if they can find the secret prize at the end.

Freshwater Ecology

A great lesson where students get outside and investigate some of the lesser known inhabitants of our freshwater ponds, creeks, and rivers! Students will use dip nets to collect an array of aquatic organisms (including aquatic insects, dragonfly larvae, tadpoles, salamanders, etc.) from the Peedee River OR our on-site ponds.

LE - Then we'll take our specimens into the lab and discuss what they are and the fact that many of these species under go metamorphosis. Finally students will sketch the organisms they caught in their natural habitat. Pictures can be taken home or hung on our classroom wall pond ecosystem.

UE – Then we'll take our specimens back to the lab where students can use a dichotomous key to identify the organisms and learn how scientists use these organisms to determine the health of a pond.

Additional Time – Students use instruments to explore other ways to evaluate the health of our ponds. We'll test basic water quality parameters of our ponds and take water samples to examine under microscopes back in the lab.

Back at school – Use our online, long-term water quality database to examine and graph changes in water quality over seasons or years.

Red Cockaded Woodpecker

The long leaf pine forests of Sandy Island are home to one of this unique and endangered species of woodpecker. Students will investigate what factors create suitable habitat for the endangered Red Cockaded Woodpecker (RCW). Then, we'll discuss the reasons for this bird's decline and have a chance to be biologists and "monitor" a simulated RCW colony.

Reptiles and Amphibians

Meet (and interact with) some of our scaly friends; this is your chance to touch live reptiles. Students will learn distinguishing characteristics of reptiles and amphibians as well as some of the challenges they face. Live animals will be used to allow for a hands-on, close up look at some of the most common reptiles in the Lowcountry.

Swallow-tailed Kites

LE - Dress a classmate up as a Swallow-tailed Kite! Learn all about the adaptations that help these unique birds migrate all the way from Brazil to nest in Waccamaw National Wildlife Refuge annually. Then, students will experience the long, difficult journey of migrating from



continent to continent in search of food and a safe haven!

UE – Students will be the scientists as they conduct a “bird survey” at the Waccamaw Center (just like our National Wildlife Refuge technicians). Using binoculars they will begin to understand some of the difficulties of collecting data in the field while also learning to identify some of the more common species of birds that utilize our Refuge.

Tracks

Become a nature detective by using clues to identify which animals live near you. Learn to identify the tracks of common animals found in Waccamaw National Wildlife Refuge and how their feet help them survive in their habitat. Students will make rubbings of tracks of local animals to take home!

Biodiversity Binges

Let’s take a close look at the biodiversity of our region! Students will learn about the five kingdoms of living things as they use scientific techniques to catalogue all of the living organisms in one of our ecosystems on site at Waccamaw Center or at one of our **Field Studies** (See Below). Then we’ll bring our data back into the classroom and utilize our math skills as we calculate and discuss the importance of biodiversity and species richness.

Additional time – Students get the opportunity to survey a few different environments and then come together as a class to compare the results.

Back at School – Repeat this activity around your school. Then, compare the data from your school to the data you collected in our forest or refuge.

Field Studies

Our goal this year is to get as many students as possible out and onto our public lands! These programs may take a bit more planning but we think it’s worth it to get kids immersed in the outdoors!

Cox Ferry

Cox Ferry is a fantastic tract of land almost on the border of Georgetown and Horry County. For this program students spend the morning identifying and collecting data on the diverse array of living things within Waccamaw Wildlife National Refuge (see Forest Ecology, Pond Ecology, and Biodiversity Binge blurbs). Then, if you have time, come back to the Environmental Education Center where we’ll spend the afternoon modeling the complex ecosystem you just investigated.

Bonus: Leave with an awesome model ecosystem mural for your classroom AND plenty of real data for students to analyze.

Additional Time: We’ll stop at a nearby location to see if we can find the Rafinesque big-eared bat colony and discuss the vital role that bats play in our ecosystem.

Sandy Island

Would you be interested in taking your class on a boat trip down the Peedee River to explore the ecosystems of Sandy Island. We have plenty of standards-based, inquiry driven lessons to accompany the trip, and we’re trying to gauge the interest and feasibility of making this a field study offering at Waccamaw! The whole program would last about 3.5 hours.



Service Learning

We love when students give back the environments they are studying and are always up for helping classes with service learning projects. 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:

Habitat Enhancement - Pick a species or ecosystem that your class is concerned about; research what can be done to help that species. (Past projects have included: bat boxes, bird houses, build an oyster reef, planting native plants)

Teach others about our wildlife! Students come to the Refuge to learn about some of the native and invasive flora/fauna of Charleston. Then they can work in groups to create interesting and informative signs to hang up (in school yard, on interpretive trails, etc.) teaching other students interesting facts or important FYIs (e.g. Don't touch the poison Ivy!) about the ecosystems.

Raising Money - 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 – selling “Turtle Bags” (reusable grocery bags with sea turtle graphics) with a note inside about making sure your trash ends up in the right place and not in a Sea Turtle’s stomach.

Make your schoolyard in to a great habitat! This usually includes things like building and installing bluebird 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 I start this as a research project, having students investigate what they can do to make a yard more hospitable habitat.