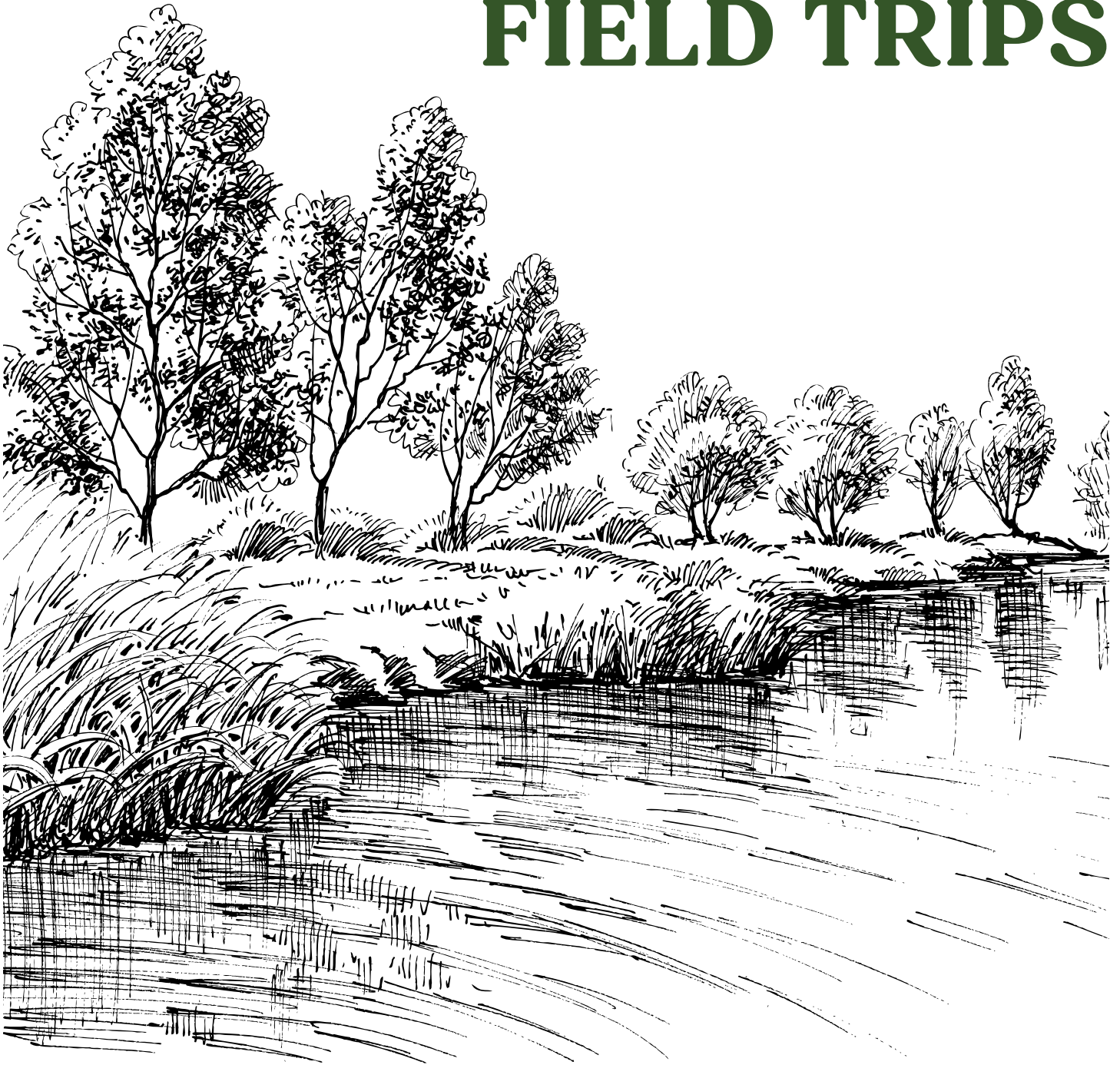


K-12 PROGRAM DESCRIPTIONS

CONSERVATION EDUCATION FIELD TRIPS



**SOUTH CAROLINA DEPARTMENT OF
NATURAL RESOURCES**

UPDATED JANUARY 2025
24-14399

CURRICULUM-BASED PROGRAMS

Bring your students out to visit one of South Carolina Department of Natural Resources' public lands. SCDNR owned and managed properties are protected areas that play a critical role in conserving fish, wildlife, plants, and other natural and cultural resources. These lands are open to the public for a variety of recreational uses, from hunting and fishing to hiking and wildlife viewing.

These free education programs are correlated to the 2021 South Carolina College and Career-Ready Science Standards. The field trips take place on a variety of Heritage Preserves and Wildlife Management Areas across the state. Each program is designed to be approximately 4 hours long running from 9am – 1pm, with a built-in lunch break. Participants are responsible for bringing their own lunches and refillable water bottles.

Please plan to bring a clipboard and pencil for each student. Students will be outside for the entirety of the program and should wear weather-appropriate clothing and closed-toed shoes. Schools must bring enough adults (teachers included) to achieve a 1:7 adult to student ratio.

For questions or to schedule a program, please contact Beth Foley, Conservation Education Coordinator, at FoleyE@dnr.sc.gov or (803) 394-3920. In your request, please make sure to include your school's name, grade level, total number of classes, total number of students, and suggested program dates.

CONGAREE BLUFFS HERITAGE PRESERVE

Address: Turkey Track Ln, St Matthews, SC 29135

About the Property:

The Congaree Bluffs Heritage Preserve comprises 201 acres and contains steep, undisturbed bluffs bordering the Congaree River. Located in Calhoun County, the preserve harbors significant stands of American beech, oak-hickory and bottomland hardwood forest. The upland areas of the preserve are being restored to longleaf pine. No comparable sites exist in the coastal plain of South Carolina. There are several other sites nearby on private lands, but these areas, along with the preserve, are unique. Similar systems in and around the Florida Panhandle have been documented to have the greatest number of trees per unit area within the temperate forest of the eastern United States. More than 100 species of trees, shrubs and woody vines exist in the preserve from the ridge base to the crest of the bluffs. There are around 200 species of woody plants.



FIELD TRIPS

*The Congaree Bluffs HP field trips can also be completed at Wateree HP & WMA.

2ND GRADE AND 3RD GRADE

HIDDEN IN PLAIN SIGHT

- 2-LS4-1.** *Make observations of plants and animals to compare patterns of diversity within different habitats.*
- 3-LS3-1.** *Analyze and interpret data to provide evidence that plants and animals have inherited traits that vary within a group of similar organisms.*
- 3-LS3-2.** *Use evidence to support the explanation that traits can be influenced by the environment.*
- 3-LS4-2.** *Use evidence to construct an explanation for how the variations in traits among individuals of the same species may provide advantages in surviving and producing offspring.*

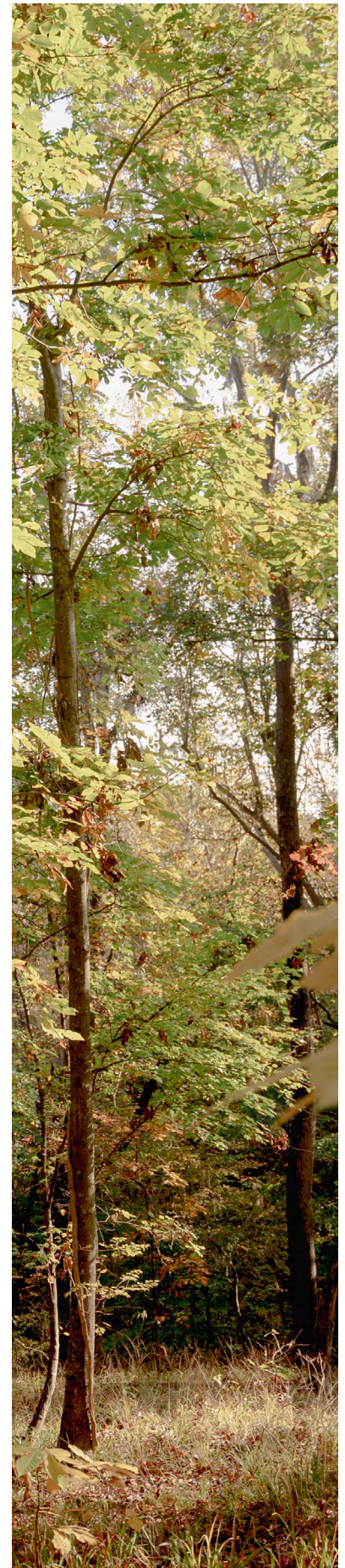
Students will discover the importance of camouflage as an adaptation for predator and prey relationships. They will go on a forest hike to search for evidence of camouflage as well as other advantageous adaptations for survival. A game of adaptive coloration will be played in which they will become hungry birds who need to compete to find food. Students will then partake in a dynamic activity to explore how prey organisms also change their behavior to avoid detection by predators.

4TH GRADE AND 5TH GRADE

ECOSYSTEMS AND FOOD WEBS

- 5-PS3-1.** *Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.*
- 5-LS2-1.** *Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.*
- 5-LS1-1.** *Support an argument with evidence that plants obtain materials they need for growth mainly from air and water.*

Students will complete a forest scavenger hunt, exploring for evidence of biotic organisms and categorizing them as producers, consumers, or decomposers. Each student will then become an organism in a food web and discover the interdependence of species and energy flow within an ecosystem. They will then dive into the importance of decomposers, discovering their vital role in the circle of life, while recording evidence of them in a decaying log.

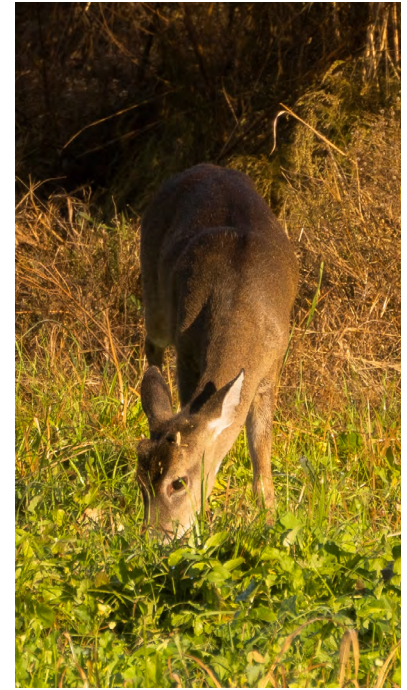


MIDDLE SCHOOL

DEER DYNAMICS

- 7-LS2-1.** *Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.*
- 7-LS2-3.** *Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.*
- 7-LS2-4.** *Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.*

The white-tailed deer is the most popular, sought after, and economically important game animal in South Carolina. Students will spend the day as a Large Game Biologist, researching white-tailed deer population dynamics. They will participate in an activity to determine the carrying capacity of a population of deer and describe the limiting factors that influenced it. Students will then conduct a habitat assessment of two different plots of land and determine the most suitable habitat type for deer. They will also complete a line transect survey in each plot and record evidence of deer.

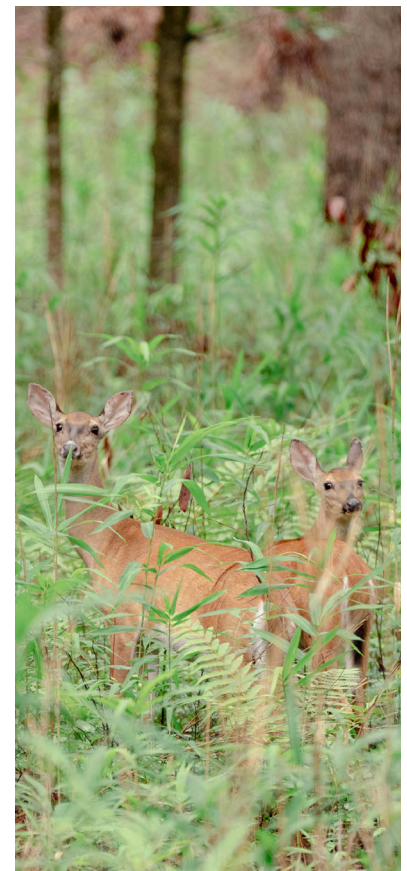


HIGH SCHOOL

CHANGE AND CARRYING CAPACITY

- B-LS2-1.** *Use mathematical and/or computational representations to support explanations of biotic and abiotic factors that affect carrying capacity of ecosystems at different scales.*
- B-LS2-6.** *Evaluate claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions but changing conditions may result in a new ecosystem.*
- B-LS2-7.** *Design, evaluate, and refine a solution for reducing the impacts of human activities on biodiversity and ecosystem health.*
- B-LS4-5.** *Evaluate the evidence supporting claims that changes in environmental conditions may result in (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.*

Carrying capacity is a dynamic equilibrium that affects all populations of living organisms within their communities. Students will become herds of deer in an activity to simulate how access to food is a limiting factor that can change a population's carrying capacity. They will then act as Human Dimension Specialists, participating in a mock town hall meeting in a community that is determining how to best manage an overabundant population of white-tailed deer. They will have to take into consideration many differing opinions and concerns about the issue and agree on a solution to fix it.



WATEREE HERITAGE PRESERVE & WILDLIFE MANAGEMENT AREA

Address: 15001 Goodwill Rd, Eastover, SC 29044

About the Property:

Waterree River Heritage Preserve and Wildlife Management Area was purchased by Haile Gold Mine as partial mitigation for a mining operation that was permitted in Lancaster County, SC. WRHP will protect upland, bottomland and managed wetland habitats and provide recreational opportunities including hunting and fishing for the people of South Carolina. One important objective is to protect and enhance jurisdictional wetlands and streams on the property by restoring the natural hydrological flow in those areas where the water was historically diverted and by re-establishing bottomland hardwood species on other areas of the property.

WRHP is located seventeen miles east of Columbia on Highway 378 near the Eastover community. The property is bordered by the Waterree River and is on the Richland/Sumter County line, with all of the land area in Richland County. The WRHP is comprised of the old Cook's Mountain and Goodwill Plantation tracts. It is an important tract due to the importance of the historic and natural resource characteristics of the property. You can still find graves, ditches and dikes built by enslaved Africans for rice production on the property. Land types on the property range from a beautiful hardwood forest along the river to some of the highest elevations in the central part of the state. The mountain itself rises to an elevation of 372 feet above sea level, an anomaly in this area that offers scenic views for miles. The mountain was the home of Mr. James Cook, a famous cartographer, who produced the Cook Map of South Carolina in 1773.

The property also has a wide variety of plant and animal life. There are many wildlife opening on the property and numerous wildlife species including white-tailed deer, turkey, bobwhite quail and songbirds. Colonels Creek runs through the southern part of the property and there is a small fishing pond on the northwest border of the tract. Bird watching, hiking and wildlife observation are encouraged in addition to public hunting and fishing.

Much of the property was ditched and Colonels Creek's original path was diverted to control water hydrology for farming purposes by many of the previous owners. You can still see evidence of ditching in the bottomland hardwood areas of the property.



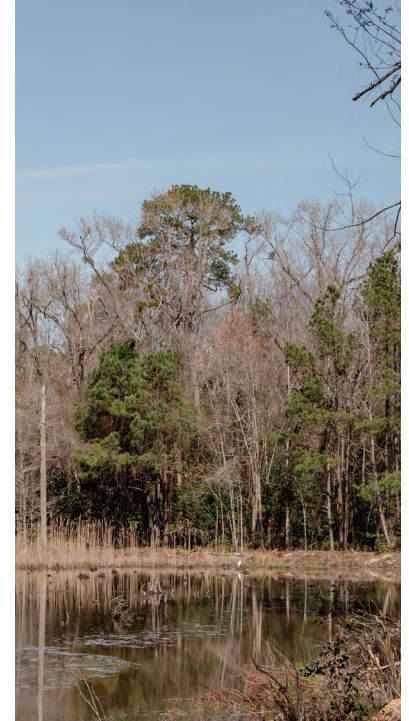
FIELD TRIPS

2ND GRADE AND 3RD GRADE

THE WATER IN WATEREE

- 2-ESS3-1.** *Design solutions to address human impacts on natural resources in the local environment.*
- 2-ESS2-2.** *Develop a model to represent the shapes and kinds of land and bodies of water in an area.*
- 2-ESS2-3.** *Obtain information to identify where water is found on Earth and that it can be solid or liquid.*
- 3-LS4-4.** *Make a claim about the effectiveness of a solution to a problem caused when the environment changes and affects organisms living there.*

Students will learn the history of land-use on the property and how water was previously diverted for rice cultivation. They will take a driving tour the site, which is now managed to protect upland, bottomland and wetland habitats. The vital function of watersheds will be explored, and students will model the flow of water within a watershed. Students will discover how a beaver can build a dam to change their environment, creating essential wetland habitat for itself as well as many other wildlife species. The class will compete in small groups to build their own beaver dams and see which one holds the most water.



4TH GRADE AND 5TH GRADE

THE ART OF AQUATIC ADAPTATIONS

- 4-LS1-1.** *Construct an argument that plants and animals have internal and external structures that function together in a system to support survival, growth, behavior, and reproduction.*
- 4-LS1-2.** *Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.*

Students will visit two different aquatic ecosystems and catalog the abiotic and biotic organisms found at each site. They will take a deep dive into fish anatomy and explore how structural adaptations and processes of fish allow for defense, movement, and resource obtainment. Students will complete an activity in which they will design their own fish that is adapted for a specific aquatic habitat. They will also compete in a game where they will become a striped bass migrating upstream to spawn, while navigating only by smell.



MIDDLE SCHOOL

THE MIGHTY MACROS

- 7-LS2-4.** *Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.*
- 7-LS2-5.** *Evaluate competing design solutions for maintaining biodiversity and ecosystem services.*
- 8-LS1-4.** *Use arguments, based on empirical evidence and scientific reasoning, to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.*
- 8-LS4-6.** *Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.*

Macroinvertebrates spend all their time in the water, are long-lived, and have a wide range of pollution tolerances, therefore are good environmental indicators. Sampling of macroinvertebrates is a great way to measure the health of a body of water. Students will spend the day as an Aquatic Biologist, monitoring the health of a stream as well as a pond. They will conduct field work, collect and identify macroinvertebrates, measure water quality, and analyze data. Students will also play a “Macroinvertebrate Mayhem” activity to simulate the effects of environmental stressors on macroinvertebrate populations.



HIGH SCHOOL

FIRE AND THE LONGLEAF PINE SAVANNA ECOSYSTEM

- B-LS2-2.** *Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.*
- B-LS2-6.** *Evaluate claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions but changing conditions may result in a new ecosystem.*
- B-LS4-4.** *Construct an explanation based on evidence for how natural selection leads to adaptation of populations.*
- B-LS4-5.** *Evaluate the evidence supporting claims that changes in environmental conditions may result in (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.*

The longleaf pine savanna ecosystem historically ranged across 90 million acres in the sandhills of the Southeastern US. There are now just roughly 5 million acres remaining due to fire suppression and land-use conversion. Students will learn why foresters and wildlife biologists use prescribed fire as a management tool to improve the health of this unique ecosystem. They will investigate fire's impact on vegetation and wildlife habitat by sampling and comparing two plots of land - a stand with regular fire management and a stand with no fire history. Students will also investigate endemic flora and fauna found in a longleaf pine savanna ecosystem.

