



Boardwalk Talk

The official newspaper of
Congaree National Park
Summer 2010

Superintendent's Message

Welcome to Congaree National Park! This summer edition of the Boardwalk Talk is full of great information to help you make the most of your visit to Congaree. As summer gets underway, the Park is buzzing with activity. There are several new ranger-guided programs being offered, as well as many familiar ones. Check the schedule for one that interests you. Summer in South Carolina may mean heat and humidity, but it also means wonderfully pleasant mornings and evenings, and the chance to witness the June return of the synchronized fireflies! Ask a ranger for more information on this natural phenomenon.

With the intense daytime heat come frequent spectacular afternoon thunderstorms, so always be sure to stop by the front desk and check weather forecasts before you hike, paddle, or camp in the Park. With proper planning, the summer is a great time to get out and enjoy hiking or paddling in Congaree's wilderness. In fact, one of our most popular guided programs is the free guided canoe tour. Over the last four years we have more than quadrupled the number of tours offered, and the demand still exceeds the number of spaces available. We've recently added a special evening canoe tour for those who are interested in a truly unique

opportunity to experience the Park. Based on visitor feedback, we are also pleased to announce a change in our canoe tour reservation policy that should improve everyone's opportunity to join these exciting tours. See inside this edition of the *Boardwalk Talk* for more information.

We are conducting four children's camps this summer, and they are all also filled to capacity. Don't be surprised if you encounter our Congaree Ecology Campers and Swamp Stories Campers while you are out in the Park! In addition, we have more than a dozen summer interns and seasonal employees working in all park divisions (assisting with camps, clearing park trails, leading guided walks and talks, removing exotic plants, and working as geologists or photographers). It is my hope that if you return to the Park in a couple of years you will find some of these talented people working permanently here at Congaree!

Enjoy your visit, and as always, please feel free to share with me your experiences at Congaree by leaving a message for me at the front desk.

Safe Travels,
Tracy Swartout
Tracy Swartout



Tracy Swartout, Park Superintendent

A Summer Storm

Fran Rametta, Park Ranger

In summer, we hear the shriek of the Barred Owlets and see Water Moccasins sunning themselves on debris piles along the Low Boardwalk. For me, summer is a season of special memories.

I first arrived on duty as a park ranger at Congaree on June 15th, 1980. It was a little too hot and muggy for a man who hailed from the Great Smoky Mountains National Park and was accustomed to cooler temperatures at higher elevations.

Within the first month, I was introduced to a South Carolina thunderstorm. I was parked at the old hunt club near Cedar Creek and Wise Lake. I had finished patrolling for the day and was watching

white clouds march across an azure blue sky. Gradually, the sky grew darker as the temperature began to drop. I felt a peculiar calmness in the air. A light breeze rattled leaves from nearby trees. The sky turned dark yellow, and then black. The wind picked up, gusting around me. It sounded like a freight train barreling towards me. As rain began pummeling me and my truck, I decided to get out of the forest as quickly as possible.

I recalled a similar storm that occurred when I was a child living in Oklahoma. That one spawned tornadoes. It dawned on me that there might be a tornado very close. I pushed the gas pedal and drove away from the hunt club. I drove a hun-

dred yards to find a 130-foot Loblolly Pine tree blocking the road after crashing to the ground. I jumped out of the truck and ran up what we now call the Sims Trail. I counted two, three, four large Loblolly Pines blocking my way. I heard other trees falling throughout the forest. Abandoning my truck, I walked up Old Bluff Road toward Columbia. I was thankful for the passerby who gave me a ride home. I did not see another storm like that until Hurricane Hugo in 1989.

This is just one of many summer memories I have of Congaree National Park. I hope you will visit the Park and have some of your own memorable experiences.

 **Pets in the Park**

Pets are welcome at Congaree National Park; however, they are not permitted on the Boardwalk. Access to the trail system is located just outside the Harry Hampton Visitor Center. While visiting the park, keep your pet on a leash no longer than six feet in length or physically confined at all times so as not to disturb other visitors or animals that have a home in Congaree.

Do not leave your pet unattended in a vehicle or tied to an object in the Park.

Clean up after your pets by using a bag. Biodegradable bags are located at the Primitive Campground and at the beginning of the Bluff Trail outside the Harry Hampton Visitor Center.

 **Canoe Tour Reservations**

The policy for ranger-guided canoe tour reservations is changing. Please see page five for details.

Emergencies

Call 911 or contact a park ranger. Be aware that cell phone service is patchy throughout the park.

EXPERIENCE YOUR AMERICA™

To:

Congaree National Park
100 National Park Road
Hopkins, SC 29061





National Park Service
U.S. Department of the Interior

Congaree National Park

The *Boardwalk Talk* is a publication of the National Park Service for the orientation and education of visitors to Congaree National Park.

The National Park Service was established on August 25, 1916, "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for future generations." In 1976, Congaree became part of the National Park Service as Congaree Swamp National Monument to preserve the largest remaining tract of old-growth bottomland hardwood forest in the United States. It was re-designated as Congaree National Park in 2003.

Superintendent

Tracy Swartout

Mailing Address

Congaree National Park
100 National Park Rd.
Hopkins, SC 29061

Phone

(803) 776-4396

Website

www.nps.gov/cong

Email

cosw_information@nps.gov

Operating Hours

Congaree National Park is open 24 hours a day, 7 days a week. The Harry Hampton Visitor Center is open from 8:30 a.m. to 5:00 p.m. and open until 7:00 p.m. on Fridays, Saturdays and Sundays during Daylight Savings Time. The visitor center is closed on December 25th.

Fees

Congaree National Park does not charge an admission fee and all programs are free of charge.

Climate

Winter: low 30s to high 60s
Spring: low 50s to high 80s
Summer: low 60s to high 90s (& humid)
Fall: low 50s to high 80s

Eastern National



Eastern National, a non-profit cooperating association with the National Park Service, supports the mission of the National Park Service by producing educational materials, and has provided the generous funds for this publication.

Photograph Credits

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The National Park Service cares for the special places saved by the American people so that all may experience our heritage.

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Things To Do

CAMPING

The Primitive Campground has fire rings, portable toilets, and picnic tables. There are eight sites available on a first-come, first-served basis. Each site is limited to eight campers. The Bluff Campground provides picnic tables and fire rings and is ideal for group camping.

Camping is also permitted by hiking or canoeing into the backcountry. To minimize human impact in this designated Wilderness Area, campfires are *prohibited*. All campers are required to obtain a camping permit and a list of regulations at the Harry Hampton Visitor Center prior to camping.

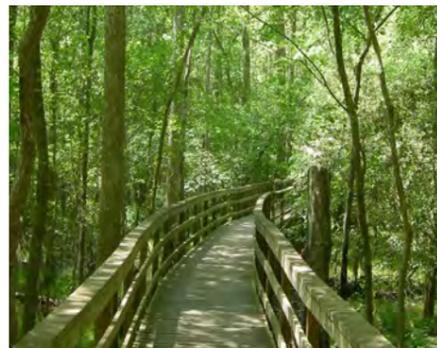
CANOEING/KAYAKING

Traveling by canoe or kayak is a great way to enjoy this primeval wilderness while floating past some of the tallest trees in eastern North America. Paddling is also a thrilling way to encounter the diverse wildlife of the park including deer, otters, turtles, snakes, and raccoons. Besides

adventures on Cedar Creek, opportunities are also available on the Congaree and Wateree River Blue Trails. Please check with rangers for current conditions.

FISHING

All waterways except Weston Lake are open to fishing with a valid South Caro-



Elevated Boardwalk

lina state fishing license. Please do not use the Boardwalk to access waterways if you are carrying fishing gear. Please obtain a complete list of fishing regulations from

the Harry Hampton Visitor Center or online at www.nps.gov/cong.

WALKS AND TALKS

Rangers provide a variety of guided walks, talks, campfire programs, and canoe tours. For a complete list of ranger guided interpretive programs, see pages six and seven. Listen and learn as rangers give talks on various topics, or take you on a hike through the old-growth forest.

BIRDING

Congaree National Park has been designated as a Globally Important Bird Area by the American Bird Conservancy. Many migratory birds can be found during the spring and fall migrations. Bring binoculars and ask rangers for a list of documented species within the park.

PICKNICKING

A picnic shelter with trash and recycling receptacles is available on a first-come, first-served basis at the Harry Hampton Visitor Center.

Safety First

WHAT IS A HEAT RELATED ILLNESS?

Heat related illnesses occur when the body is unable to maintain a normal temperature of 98.6 degrees and generates too much heat. Exposure to heat and humidity causes body temperature to rise. The body sweats in response to excess heat and heat is lost as sweat evaporates. One can lose up to one liter (two pints) of sweat per hour. On extremely humid days, sweat does not evaporate quickly, and may cause the body to overheat. Here at Congaree National Park, high temperatures and high humidity combine to create conditions that may lead to heat related illnesses. If you experience any signs or symptoms of heat related illnesses, call 911 or call a park ranger immediately.

WHAT ARE THE SIGNS AND SYMPTOMS?

Heat Cramps: Heat cramps commonly occur in the muscles of the legs and abdomen and are accompanied by heavy sweating. If you experience heat cramps, rest and sip water for relief.

Heat Exhaustion: Heat exhaustion causes weakness, cold, pale, clammy skin, fainting, and vomiting. Move to a cooler environment and apply cool, wet cloths to the body.

Heat Stroke: Heat stroke occurs when the body temperature reaches 106 degrees or higher. Skin is hot and dry and unconsciousness may occur. This is a life threatening illness, Seek medical attention immediately.

HOW CAN I PREVENT A HEAT RELATED ILLNESS?

Be aware of the weather conditions. Up-to-date information is available at the Harry Hampton Visitor Center. The Heat Index is a measure of how hot it feels when relative humidity is added to air temperature.

Drink water or other non-alcoholic beverages before you become thirsty. The body needs water to keep cool. Water bottles can be purchased at the Harry Hampton Visitor Center; bottled water is also available.

Wear lightweight, light-colored clothing to help keep cool. Pace yourself and plan activities for the coolest part of the day.

Book Review!

Jane Weilert, Park Volunteer

Guidebooks are invaluable for enjoying nature and satisfying the human need to name things. The majority of guidebooks are specific to one topic, too large to carry around, and usually have too much information for the occasional naturalist.

A solution to this predicament is a pocket guide, a small book about 200 pages in length. A pocket guide concentrates on the major species that would likely be encountered by the occasional naturalist on a walk through nature.

There are two series of pocket guides available at the Eastern National Bookstore in the Harry Hampton Visitor Center, The Golden Guides (St. Martin's Press, \$6.95) and the National Audubon Society Pocket Guides (Chanticleer Press, \$9.95). Both series have guides for birds, flowers, butterflies, moths, and insects. The National Audubon Society has a guide for amphibians, while the Golden Guide provides a guide to mammals.

The Golden Guides use illustrations of plants and animals in their natural habitats. Because the book is illustrated, more details about each animal and plant are provided. For example, in the wildflower guide, different color varieties of a plant are shown as well as details of the flower. The butterfly and moth guide illustrates the different larval stages.

The National Audubon Society Pocket Guides use color photos of each species. The plants and animals are photographed in their natural habitats. These guides give detailed descriptions of each specimen.

Both series of books have introductory information that describe the basics for identifying the species. This includes the anatomy of the animal and parts of the plant. Both series have indexes and display both common and scientific names. Both series show maps of North America and illustrate the geographic distribution of the species.

So impress your friends and family with your ability to identify and expound on the habitat and habits of the familiar species of plants and animals at Congaree National Park, or your own back yard. Buy a few pocket guides. It's an amazing world!

Firearms in the Park

A new federal law allows people who can legally possess firearms under applicable federal, state, and local laws, to legally possess firearms in this Park. However, firearms are prohibited in federal buildings. It is the responsibility of visitors to understand and comply with all applicable state, local, and federal firearms laws before entering this park. As a starting point, please visit our state's website at www.sled.sc.gov/SCStateGunLaws1.aspx?MenuID=CWP to become familiar with the state gun laws in South Carolina.

While this law affects a person's ability to possess a firearm in the park, using firearms within Congaree National Park is still prohibited by law.

Volunteers in Parks

Do you enjoy spending time outdoors? Do you enjoy interacting with people? Do you enjoy canoeing and kayaking? Are you interested in science?

If you answered yes to any of these questions, Congaree National Park has opportunities for you. Volunteers help protect and preserve Congaree National Park in a variety of ways including staffing the information desk, maintaining trails, assisting with guided canoe tours and conducting research as a citizen scientist.

Numerous volunteer opportunities are available each year at Congaree. Volunteers work in all divisions, including Natural and Cultural Resources, Education, Interpretation, and Facility Maintenance. Volunteers are also needed to assist with special events held at the Park and off-site. Opportunities accommodate a wide range of skills and interests.

NATURAL AND CULTURAL RESOURCES

Resource volunteers assist the Park with non-native plant removal, assist researchers in the field as needed, collect spatial data with GPS/GIS, as well as assist with data management. Contact: Theresa Yednock at (803) 647-3974.

INTERPRETATION AND EDUCATION

Interpretation and Education volunteers

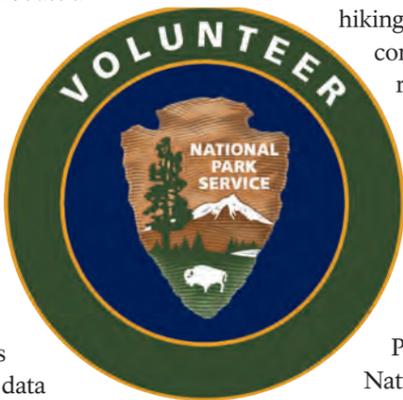


Volunteers help clean up the Park.

assist the park with weekly canoe tours, guided walks, talks, and staffing the information desk. Volunteers can also assist with school groups and off-site education/interpretation programs. Contact: Fran Rametta at (803) 647-3969.

FACILITY MAINTENANCE

Facility Maintenance volunteers assist the Park with trail work (canoe trail, hiking trails, and boardwalks), construction projects, litter removal, and day-to-day operations. Contact: John Torrence at (803) 647-3981.



SPECIAL EVENTS

Volunteers can assist the Park during the annual NatureFest (April), Public Lands Day (September), Swampfest! (October), and Congaree Campfire Chronicles (November), providing valuable assistance to park visitors and park staff. Contact: Fran Rametta at (803) 647-3969.

The Life of an Intern

Heather Otte, Park Volunteer

I arrived in Congaree National Park on the last day of a balmy November, or maybe my judgment was skewed coming from below freezing temperatures of Indiana. I was tasked with generating a map of Switchcane, a native bamboo species once prolific across the Southeast. The Congaree River had different ideas and flooded the Park continually for two months straight upon my arrival. Eventually the floodwaters receded and the cane came popping back up to the surface, ready and waiting for me.

Over the course of my internship, I was able to create a map of Switchcane across a significant area of the Park. My internship allowed me to explore some of the more remote locations in Congaree National Park and I witnessed some amazing things.

One sunny day in mid-March, I noticed a vulture take off from the ground and land in a tree 50 meters away. The Switchcane was about shoulder height but had not yet developed summer growth, so it was still rather bare. Curious, I stopped and saw three more vultures emerge from the ground. It dawned on me, that there must be a dead animal over there. Making a beeline for the spot, I found a dead White-tailed Deer. Some view death as a horrible thing, but the life cycle does not end at the adult phase. It does not even end at

death. It ends with complete decay, total return of every borrowed mineral, nutrient, and element amassed in a body over its lifespan. These vultures, now staring at me from the trees, were doing their part to assist in the return of the deer's body to the forest, dropping excrement from the sky like little vitamin pills for the plants.



Mapping Switch Cane

I thoroughly enjoyed my time at Congaree, but without question my favorite time was night, because at night, it felt like I became the sole beneficiary of the trees. When the birds stopped calling and even the Barred Owls' calls became infrequent,

What is Wilderness?

Corinne Fenner, Park Ranger

Ask this question to those strolling the streets of Columbia, South Carolina and you will receive a different answer from each person. To some wilderness is a wooded lot, to others it is the entire universe. What is wilderness to you?

Congaree National Park protects and provides a refuge of designated Wilderness where you can experience solitude and total immersion in an undisturbed natural area. The current size of Congaree National Park is 24,180 acres with 15,010 designated as Wilderness, and another 7,500 as proposed Wilderness that are managed as such.

Theories defining wilderness developed as a response to shrinking natural areas in the 19th century. As wilderness areas were disappearing, the movement to protect them grew, with proponents highlighting the many values of wilderness areas to our society and the world. Howard Zahniser, one of the authors of the Wilderness Act of 1964, saw the Wilderness movement as a redefinition of progress, countering the urbanization that was destroying America's wilderness. Aldo Leopold believed wilderness experiences shaped individual and national character, while Bob Marshall argued wilderness experiences could prevent moral deterioration. John Muir believed the freedom, solitude, and beauty found in wilderness areas could satisfy all human needs and is vital to our bodies, minds, and spirits.

In 1964, President Lyndon B. Johnson signed the Wilderness Act into law, giving designated wilderness areas permanent protection and giving Congress exclusive power to designate Wilderness areas. It also recognized the four bureaus that care

for Wilderness areas including the National Park Service, the U.S. Forest Service, The U.S. Fish and Wildlife Service, and the Bureau of Land Management. Managers of wilderness areas have to balance visitor experiences and the preservation of wilderness as areas free of human impact.

Designated wilderness areas differ from protected lands because wilderness areas are protected by law. Lands that are not protected by the Wilderness Act could be subject to future development. The Wilderness Act defines wilderness as:

“an area in contrast with areas where man and his works dominate the landscape. It is an area where the Earth and its community of life are left untrammelled (unrestricted) by man, where man himself is a visitor who does not remain.”

What is Wilderness? Take a hike at Congaree and discover for yourself.

Wilderness Quote

“For me and for thousands with similar inclinations, the most important passion of life is the overpowering desire to escape periodically from the clutches of a mechanistic civilization. To us the enjoyment of solitude, complete independence, and the beauty of undefiled panoramas is absolutely essential to happiness.”

Bob Marshall (Co-founder of the Wilderness Society)

Share the Experience Photo Contest 2010

Enter your favorite photos of your visits to America's Federal recreation lands by entering the 2010 *Share the Experience Photo Contest** for a chance to have your photo grace the front of the 2012 Federal Recreation Lands Pass. From June 1st to December 31st, you can submit up to three photos for the chance to earn national recognition for your picture. Great prizes include: Olympus digital cameras, trips to a Federal recreation area, Federal Recreation Lands Passes and more! For another chance to win, at the end of the photo submission period, the public will be invited to vote for their favorite photo. Each time you vote, you will be entered to win an Olympus camera! Enter by visiting www.sharetheexperience.org, or pick up a brochure and entry form while visiting a federal recreation land this year. You could have the next winning photo to adorn the Federal Recreation Lands Pass!

*The *Share the Experience Photo Contest* is sponsored by Olympus Imaging America Inc. and the National Park Foundation in partnership with the Bureau of Land Management, the Bureau of Reclamation, the National Park Service, U.S. Fish and Wildlife Service, and the U. S. Forest Service.

Native and Invasive Species

Heath Browder, Park Volunteer

Non-native species are organisms (both plants and animals) that have been introduced to the environment as a result of deliberate or accidental human activities. Some non-native species can become “invasive” when they escape cultivation, spread rapidly, and aggressively compete with native species. Non-native invasive species can grow, adapt, multiply and spread to unmanageable levels, which can significantly reduce biodiversity and threaten the stability and sustainability of natural ecosystems.

The floodplain ecosystem protected by Congaree National Park is not immune to the threats posed by non-native species. Wild Hogs, Asiatic Clams and more than 60 different non-native plant species are known to occur within the Park. Since Congaree National Park was established to protect one of the last stands of old-growth bottomland forest in North America, non-native invasive plant species are a top management concern. Significant resources are expended each year on controlling several known populations of non-native invasive plants. Species such as Kudzu, Chinese Wisteria, Chinese

Privet and others are actively managed through chemical and manual removal efforts.

Fortunately, everyone can help prevent the spread and introduction of invasive species. Native gardening is one way to reduce the number of invasive plants that can escape into natural ecosystems. Seeds of non-native garden plants can spread to other ecosystems through bird droppings, wind, or runoff. Below are a few native alternatives to invasive plants you may consider adding to your garden.

Invasive shrub: Chinese Privet (*Ligustrum sinense*) is a popular non-native shrub with white flowers. It is a semi-evergreen that is used to create hedges. It is shade tolerant and grows to 30 feet in height.

Native alternative: Pagoda Dogwood or Alternate Leaf Dogwood (*Cornus alternifolia*) works well to create a hedge, growing 20-35 feet in height. It prefers light to partial shade, and will produce white flower clusters in spring, blue-black berries, and fiery red autumn color.

Invasive vine: Japanese Honeysuckle (*Lonicera japonica*) is a vine with a sweet smelling yellow and white flower that blooms in May.

Native alternative: Trumpet Honeysuckle (*Lonicera sempervirens*) has bright coral colored flowers that attract hummingbirds in the spring. You can see this beautiful vine at the Boardwalk entrance, just outside the Harry Hampton Visitor Center.



John Paul

Trumpet Honeysuckle

Invasive tree: Chinaberry (*Melia azedarach*) grows up to 50 feet tall with white flowers, yellow autumn leaves, and yellow berries. The fruits are poisonous to humans and small mammals.

Native alternative: Devil’s Walking Stick (*Aralia spinosa*) reaches over 25 feet with domed clusters of white flowers in the spring, followed in autumn with yellow leaves and deep purple berries that attract the Black-throated Blue Warbler. This



Ted Bodner

Devil's Walking Stick Berries

tree can be used to create a fence-like barrier. You can observe Devil’s Walking Stick outside the Harry Hampton Visitor Center. Ask a ranger to point it out to you.

The Mystery of Cypress Knees

Stuart Greeter, Park Ranger

Rarely does a guided hike end without a visitor asking the question, “What is the function of Bald Cypress knees?” Right or wrong, we have a propensity to assign a reason to everything we see. I usually turn the question back to the group and ask them why they think these trees grow knees. No one knows for sure why Bald Cypress knees grow.



Cypress knees emerge from flood water.

that the plant tissue typically used for gas exchange in other plants was not found in Bald Cypress knees.

METHANE EMISSION

Other scientists hypothesized that knees emit methane gas, the rotten-egg smell produced by bacteria in mud. Different experiments found that the extremely small amount of methane gas emitted was probably from bacteria on the surface of the knee. At this point, there is no experimental evidence supporting methane emission.

VEGETATIVE REPRODUCTION

Some scientists have surmised that knees grow new Bald Cypress trees. I have observed thousands of Bald Cypress knees over my lifetime and have observed this happening only once. Those who have worked at Congaree for years report observing this phenomenon in two instances. Vegetative reproduction is not frequent enough to provide evidence that this is the primary purpose of the knees.

CARBOHYDRATE STORAGE

Research has confirmed the presence of “granules” that store starch in Bald Cypress knees. Briand wonders if starch may be found throughout the entire root system of the Bald Cypress tree. Additional work needs to be completed to confirm starch storage as the overall purpose of knees.

NUTRIENT ACCUMULATION

Some research suggests that knees accumulate organic nutrients during periods of flooding. In Florida, root density increased with an increase in dead Bald Cypress stumps, but no direct evidence of nutrient acquisition by knees was found.

MECHANICAL SUPPORT

In 1890, one botanist suggested, “the most important function of the Cypress knee is to stiffen and strengthen the root, in order that a great tree might anchor itself safely in yielding material.” Briand has found that Bald Cypress trees growing in deep water do not grow knees. Apparently, only Bald Cypress trees growing in fluctuating water levels tend to grow knees.



Cypress knees among the floodplain

No doubt further research is needed. A teacher on one of my field trips proposed her own theory. She said that Bald Cypress trees growing in areas where the water level fluctuate feel stressed and grow knees in response to that stress. Now, how can we design an experiment to test that theory?

In his report *Cypress Knees: An Enduring Enigma*, Christopher Briand considers many of the popular theories and supporting evidence for Bald Cypress knees. Botanists have been wondering about their purpose for almost 200 years. Theories include the following:

AERATION

Paul Kramer, at Duke University, enclosed Bald Cypress knees in plastic containers, sealed them with paraffin (beeswax), and used an oxygen analyzer to measure the amount of oxygen consumed. He concluded, “the available evidence indicates that cypress knees play no important role as aeration organs.” Other studies found

LOST IN TIME?

Referring to the purpose of Bald Cypress knees, botanist Andre’ Michaux wrote, “No cause can be assigned to their existence.” Nearly 200 years later, we still do not know their function. Briand concludes that “cypress knees evolved in response to past environmental pressures that no longer exist, in which case their function may be lost in the depths of time.”

Please Remember

Feeding wildlife, along with the removal, disturbance, destruction, or disfigurement of any park resource, is unlawful. If everyone took just one piece of Spanish Moss, or any other plant, our national heritage would soon be gone. Thank you for helping to protect your National Park.

Floodplain Safety Message

Congaree National Park is a floodplain forest. Water levels on Cedar Creek and the Congaree River fluctuate and changing water levels may make hiking, camping, and canoeing difficult. Please be aware of current water level conditions before you begin exploring. For current conditions visit or call the Harry Hampton Visitor Center at (803) 776-4396.

Freddy Fungus and Alice Algae

John Galbary, Park Volunteer

Fungus cannot survive without its algal partner. This long term relationship where both species benefit is called mutualistic symbiosis. You can observe this when examining a patch of lichen on a dead branch at Congaree National Park.

Most of the lichens you see are healthy, but a few patches of fungi on the edges have died, failing to find and incorporate an algal partner. Lichens are a unique life form brought about through this combination of two different organisms. This relationship is a win-win, plus-plus situation supporting the growth, maintenance, repair, survival, and reproduction of both species. Here are two different species living together, two kingdoms of life represented in a unique bond. The fungi provides the structure in which the algae, either photosynthetic algae of Kingdom Protista, or blue-green/cyanobacteria of Kingdom Eubacteria, dwells. The fungal partner absorbs and retains water and minerals carried in the atmosphere that both species use in cell metabolism. The fungi also secrete a weak carbonic acid which assists in nutrient cycling via decomposition and provides lichens with useful materials for survival.

Lichens do no harm as they attach to the outer bark of trees, and to dead wood. The algae uses photons from a star 93

million miles away, the sun, to produce carbohydrates and oxygen through photosynthesis.

There are more than 20,000 species of lichens worldwide. Congaree National



Flat crustose lichen

Park contains 88 reported species of lichens represented in three types, found on pieces of wood and on the ground throughout the floodplain forest of Congaree National Park.



Branching fruticose lichen

These types are crustose (crusty and flat), foliose (leafy), and fruticose (branched) lichens.

Lichens are an important component of healthy ecosystems as food for animals, nesting materials for bats and birds, nutrient recyclers, oxygen releasers and nitrogen fixers, colonizers in patchy environments, holders of soil and water (combating erosion, retaining excess water after a rain and slowly releasing it to the environment). Lichens are a beneficial component of a forest's biodiversity. They are also an indicator species for air quality. They cannot thrive in polluted air. Hardy through both temperature change and nutrient scarcity, lichens are characteristically sensitive to air pollutants. They are

one of the proverbial canaries in the coal mine, telling us that a wasteful use of resources harms the environment and may eventually harm us.

Lichens reproduce sexually through sporulation, and asexually through fragmentation. Both processes gain dissemination via wind, mammals (fur), insects, birds, and water currents.

To sum up this relationship, one can say: Freddy fungus and Alice algae took a lichen to each other! Lichens have adapted to and live at all seven layers of the forest. Lichens can be found on the surface layer of soil and rocks, among the grasses and herbaceous plants, within the shrub layer, in the understory, the sub-canopy, the canopy, and even in the emergent layer far above in the Loblolly Pines. Look for these amazing life forms as you explore Congaree.



Leafy foliose lichen

Birds in the Neighborhood

Kathleen O'Grady, Park Ranger

If you are looking for one of the most elusive birds on the East Coast, you can begin your quest this summer at Congaree National Park.

The Swainson's Warbler (*Limnothlypis swainsonii*) has returned to Congaree from its wintering grounds in Central America, ready to establish territory in this ideal habitat. One of the most sought after and least observed of all the wood warblers, the Swainson's is a skulking bird with drab brown coloring that camouflages it from birders. The most prominent field marks are a brown crown, a light eyebrow stripe, and a long bill.

If observed in flight, the Swainson's will be going from perch to perch instead of hopping around like other warblers.



Birding with a ranger



Swainson's Warbler

This small, five- and a-half-inch songbird, holds a large territory that scientists estimate can range from seven to forty-five acres. Some of this data may soon be verified as Congaree National Park is hosting researchers from Campbell University to study this wonderful warbler.

The best place to start searching for this secretive forager is southern canebrakes and lowland areas with a thick understory of vine tents and tangles. It may also be found on the ground in leaf litter searching for insects. Be on the lookout at Congaree when hiking along the Low Boardwalk and the Kingsnake Trail.

If you are interested in learning more about the bird species in Congaree National Park, join us for the North American Migration Day Bird Count on September 11, 2010, or for the Big Bird Hike on September 25, 2010. See page six for more details on these programs.

Guided Canoe Tours: New Reservation Policy begins September 15

Free ranger-guided canoe tours are one of the most popular ways to experience Congaree National Park. Based on feedback from our visiting public, we have changed the reservation process.

During a ranger-guided canoe tour, rangers provide instruction and interpretation as you paddle your own canoe along Cedar Creek. Congaree National Park provides seven canoes, paddles and PFDs (personal flotation devices). The schedule of canoe tours is available on page six of this publication, and at www.nps.gov/cong.

Reservations can be made via telephone ONLY. Requests via voicemail will NOT be accepted. Please do NOT leave a voicemail for reservations.

Children must be at least five years of age to attend.

Extra clothes in a dry bag are required during 4th quarter (October 1 -December 31) tours; water and insect repellent are recommended. Wear sturdy shoes that attach to your feet and can get muddy.

Tours will be cancelled in the event of lightning, if air temperature is below 45 degrees at the time of the tour, if the water level on Cedar Creek is above ten feet, or if winds exceed 30 miles per hour.

If you have questions, please call the Harry Hampton Visitor Center at (803)-776-4396.

Individual tours

- Reservations taken quarterly. For the 4th quarter (October 1- December 31), reservations will open September 15th and will close when filled to capacity.
- Each individual caller may reserve up to two canoes for up to six seats per tour.
- Each individual may make only one reservation per quarter.

Organized groups

- Reservations taken quarterly. For the 4th quarter, (October 1- December 31), reservations will open July 1 and close August 15.
- Group size must be between 10 and 18 people, and be members of an organized group, club, or common affiliation.

For tours through the end of September, we will continue with our current policy, which is, reservations must be made exactly two weeks in advance by calling (803)-776-4396. Please note: Tours typically fill within 15 minutes.

JULY 2010

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1 10:00a Tricky Tracks 1:30p Amazing Adaptations	2 10:00a Tricky Tracks 1:30p Tree Trek 8:00p Owl Prowl	3 9:00a Guided Canoe Tour 9:30a Nature Discovery 10:00a Oakridge Excursion 12:30p Guided Canoe Tour 1:30p Tree Trek
4 9:00a Guided Canoe Tour 10:00a Who Came Before 1:30p Tree Trek	5 10:00a Congaree Loblollies 1:30p Skins & Bones	6 1:30p Tree Trek	7 1:30p Birds & Branches	8 1:30p Roving Ranger at Weston Lake Overlook	9 1:30p Surviving Scorch 8:00p Owl Prowl	10 9:00a Guided Canoe Tour 1:30p Roving Ranger at Cedar Creek Canoe Access 2:00p Skins & Bones
11 9:00a Guided Canoe Tour 1:30p Nature Discovery	12 9:30a Birds & Branches 1:30p Tree Trek	13 1:30p Muck & Mud	14 1:30p Tree Trek	15 1:30p Nature Discovery	16 1:00p Weston Lake Wilderness Hike 2:00p Flat Hat Chats 8:00p Owl Prowl	17 9:00a Guided Canoe Tour 9:30a Nature Discovery 12:30p Guided Canoe Tour 1:30p Tree Trek 5:00p Guided Canoe Tour 8:00p Owl Prowl
18 9:00a Guided Canoe Tour 10:00a Animal Olympics 1:30p Weston Lake Wilderness Hike 5:00p Guided Canoe Tour	19 1:30p Congaree Loblollies	20 1:30p Tree Trek	21 1:30p Who Came Before	22 1:30p Amazing Adaptations	23 9:30a Nature Discovery 5:00p Guided Canoe Tour 8:00p Owl Prowl	24 9:00a Guided Canoe Tour 10:00a Oakridge Excursion 12:30p Guided Canoe Tour 1:30p Tree Trek 5:00p Guided Canoe Tour
25 9:00a Guided Canoe Tour 10:00a Scatology 1:30p Tree Trek 2:00p Trees with Knees	26 1:30p Tree Trek	27 1:30p Damsels & Dragons	28 1:30p Tree Trek	29 1:30p Amazing Adaptations	30 9:30a Insect Safari 1:00p Roving Ranger at Weston Lake Overlook 2:00p Flat Hat Chats 8:00p Owl Prowl	31 9:00a Guided Canoe Tour 12:30p Guided Canoe Tour 1:30p Insect Safari 3:00p Flat Hat Chats 5:00p Guided Canoe Tour 8:00p Owl Prowl

AUGUST 2010

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 9:00a Guided Canoe Tour 9:30a Birds & Branches 12:30p Guided Canoe Tour 1:00p Skins & Bones 1:30p Tree Trek 5:00p Guided Canoe Tour	2 1:30p Tree Trek	3 1:30p Tree Trek	4 1:30p Who Came Before?	5 1:30p Nature Discovery 5:00p Guided Canoe Tour	6 9:30a Scatology 1:00p Flat Hat Chats 1:30p Tree Trek 5:00p Guided Canoe Tour 8:00p Owl Prowl	7 9:00a Guided Canoe Tour 9:30a Nature Discovery 12:30p Guided Canoe Tour 1:30p Tree Trek 2:00p Skins & Bones 5:00p Guided Canoe Tour 8:00p Owl Prowl
8 9:00a Guided Canoe Tour 9:30a Birds & Branches 12:30p Guided Canoe Tour 1:30p Roving Ranger on Boardwalk 2:00p Flat Hat Chats 5:00p Guided Canoe Tour	9 1:30p Nature Discovery	10 1:30p Tree Trek	11 1:30p Who Came Before	12 1:30p Tree Trek 5:00p Guided Canoe Tour	13 1:30p Tree Trek 5:00p Guided Canoe Tour 8:00p Owl Prowl	14 9:00a Guided Canoe Tour 9:00a Big Tree Hike 9:30a Nature Discovery 12:30p Guided Canoe Tour 1:30p Flat Hat Chats 5:00p Guided Canoe Tour
15 9:00a Guided Canoe Tour 12:30p Guided Canoe Tour 1:30p Tree Trek 2:00p Flat Hat Chats 5:00p Guided Canoe Tour	16 1:30p Who Came Before	17 1:30p Nature Discovery	18 1:30p Muck & Mud	19 1:30p Tree trek	20 9:30a Tricky Tracks 1:30p Weston Lake Wilderness Hike 5:00p Guided Canoe Tour 8:00p Owl Prowl	21 9:00a Guided Canoe Tour 9:30a Nature Discovery 12:30p Guided Canoe Tour 1:30p Damsels & Dragons 5:00p Guided Canoe Tour
22 9:00a Guided Canoe Tour 9:30a Birds & Branches 1:30p Roving Ranger at Cedar Creek Canoe Access 2:00p Skins & Bones	23 1:30p Tree Trek	24 1:30p Amazing Adaptations	25 1:30p Tree Trek	26 1:30p Congaree Loblollies	27 10:00a Tricky Tracks 5:00p Guided Canoe Tour 8:00p Campfire Program	28 9:00a Guided Canoe Tour 9:30a Birds & Branches 10:00a River Trail Tromp 1:30p Tree Trek 2:00p Flat Hat Chats 5:00p Guided Canoe Tour
29 9:00a Guided Canoe Tour 9:30a Tree Trek 12:30p Guided Canoe Tour 1:30p Damsels & Dragons 5:00p Guided Canoe Tour	30 1:30p Nature Discovery	31 1:30p Tree Trek				

SEPTEMBER 2010

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1 1:30p Who Came Before	2 1:30p Tree Trek	3 9:30a Nature Discovery 1:30p Weston Lake Wilderness Hike 5:00p Guided Canoe Tour 8:00p Owl Prowl	4 9:00a Guided Canoe Tour 9:00a Big Tree Hike 9:30a Nature Discovery 1:30p Tree Trek
5 9:00a Guided Canoe Tour 9:30a Nature Discovery 1:30p Who Came Before 8:00p Owl Prowl	6 10:00a Searching for Harry 1:30p Skins & Bones	7 1:30p Amazing Adaptations	8 1:30p Tree Trek	9 1:30p Nature Discovery	10 9:30a Birds & Branches 1:30p Tree Trek 8:00p Owl Prowl	11 7:00a N.A. Migration Day Count 9:00a Guided Canoe Tour 9:30a Nature Discovery 1:30p Tree Trek
12 9:00a Guided Canoe Tour 12:30p Guided Canoe Tour 1:30p Tree Trek 5:00p Guided Canoe Tour	13 1:30p Tree Trek	14 1:30p Nature Discovery	15 1:30p Roving Ranger at Weston Lake Overlook	16 1:30p Congaree Loblollies	17 1:30p Tree Trek 8:00p Owl Prowl	18 9:00a Butterfly Count 9:00a Guided Canoe Tour 9:30a Nature Discovery 12:30p Guided Canoe Tour 1:30p Tree Trek 5:00p Guided Canoe Tour
19 9:00a Guided Canoe Tour 9:30a Skins & Bones 1:30p Amazing Adaptations	20 1:30p Amazing Adaptations	21 1:30p Who Came Before	22 1:30p Tree Trek	23 1:30p Nature Discovery	24 1:30p Congaree Loblollies 5:00p Guided Canoe Tour 8:00p Owl Prowl	25 8:00a Big Bird Hike 9:00a Guided Canoe Tour 12:30p Guided Canoe Tour 1:30p Tree Trek 5:00p Guided Canoe Tour
26 9:00a Guided Canoe Tour 1:30p Weston Lake Wilderness Hike	27 1:30p Trees with Knees	28 1:30p Flat Hat Chats	29 1:30p Tree Trek	30 1:30p Tree Trek		

Program Descriptions



Attending Ranger guided programs

MEET THE RANGER

All programs meet at the Harry Hampton Visitor Center unless noted otherwise.

BE PREPARED

Wear weather appropriate clothing, and sturdy walking shoes, and bring water.

RESERVATIONS

Certain programs require reservations by calling (803) 776-4396.

CANCELLATIONS

Programs may be cancelled for inclement weather and/or park emergencies.

PETS

Pets are not permitted to attend ranger guided programs.



Junior Ranger Program

Hey Kids! You can become a Junior Ranger and help protect your National Park! Stop by the Harry Hampton Visitor Center to pick up a Junior Ranger workbook and complete activities as you discover Congaree.

AMAZING ADAPTATIONS

Stroll around the 2.4 mile Boardwalk and become familiar with some of the amazing adaptations that allow plants and animals to survive here.

ANIMAL OLYMPICS

Hey Kids! Do you know which animal is the fastest, longest, and tallest? Join a ranger to learn about animal extremes and participate in some Olympic events that highlight these amazing creatures. Wear your running shoes and bring water.

BIG BIRD HIKE

Come on out for a forest field trip. We will explore several different trails as we look for migrating birds moving through Congaree National Park on their way back to their winter homes.

BIG TREE HIKE

Join a ranger on this 6 mile off trail hike to some of the largest trees at Congaree. Look forward to scoring a few to see if they're "champions." Reservations required. (803)-776-4396

BIRDS AND BRANCHES

Fly into the visitor center and meet a ranger for a guided hike. Bring your binoculars and search out who may be currently residing in the forest.

BUTTERFLY COUNT

This is a one day inventory conducted by citizen scientists of butterfly species throughout Congaree National Park. Help search for and identify butterfly species within various habitats. Reservations required.

CAMPFIRE PROGRAM

Learn about the nocturnal animals that have a home at Congaree while enjoying a crackling campfire.

CONGAREE LOBLOLLIES

Stroll down Sims Trail and out the Weston Lake Loop Trail to measure some of the large Loblolly Pines in the Park. Develop your own theory on how they got here and visit the current National Champion Loblolly Pine!

DAMSELS AND DRAGONS

Stop by the exhibit table to find out what species of damselflies and dragonflies are found in the forest. Who knows, you may spot some of them as you get out and explore the Park.

FLAT HAT CHATS

Listen and learn as rangers give 15 minute talks on different topics including Congaree history, fire, swamps vs. floodplains, and owls. Please visit the Harry Hampton Visitor Center for specific times.

GUIDED CANOE TOUR

Enjoy the ambiance of this old-growth forest while paddling under Bald Cypress and tupelo trees. Bring water, a snack, and a change of clothes. Reservations required. See page five for details.

INSECT SAFARI

Hey Kids! Are you interested in learning about some of the smallest members of the animal kingdom? Join a ranger for a hike through the floodplain as we search for insects along the trail.

MUCK AND MUD

Hey Kids! Do you know what's squirming and wiggling in the mud in the park? Join a ranger for a hike to Weston Lake to see what creatures you can catch!

NATURE DISCOVERY HIKE

Discover the floodplain on this guided Boardwalk hike. We'll explore the forest, looking and listening for animals.

NORTH AMERICAN MIGRATION DAY COUNT

Participate in a bird count of the resident and migratory birds that are in the Congaree National Park. This census gives researchers a snapshot of the species in the area and allows you to be a Citizen Scientist.



Flat Hat Chat

OAKRIDGE EXCURSION

Bring water, a sack lunch, and sturdy hiking boots for this 6.6 mile hike among some of the park's largest oaks.

OWL PROWL

Explore the world of owls on this guided night hike in the forest. We almost always hear the owls asking, "Who cooks for you, who cooks for you, who cooks for y'all?" Reservations required. (803) 776-4396

RIVER TRAIL TROMP

Explore the path less traveled. Join a ranger on this 10 mile, five hour wilderness hike to the Congaree River. Bring a sack lunch to enjoy on the river's edge.

ROVING RANGER

Rendezvous with a ranger at various locations throughout the Park including Weston Lake Overlook, Cedar Creek Canoe Access, or along the Boardwalk. The ranger may have some exciting things to show you, and you'll have the opportunity to ask the expert questions. A ranger will be at the specified location for two hours.

SEARCHING FOR HARRY

In the 1950s, Harry Hampton appeared on the back cover of S.C. Wildlife Magazine, standing next to a large Bald Cypress tree. At the time, he was the sole proponent working to preserve Congaree. His initiative led to the establishment of Congaree National Park. Join a ranger during this four hour, off-trail guided hike to the Harry Hampton Bald Cypress tree.

SCATOLOGY

Hey Kids! Do you know the tips on turds, facts on feces, or data on dung? Plop into the Harry Hampton Visitor Center for a fun look at the science of what animals leave behind.

SKINS AND BONES

For kids of all ages! Have you ever wondered what animals are wearing under and over their skin? Join a Ranger for a look at some of the skulls and furs of the Congaree mammals.

SURVIVING SCORCH

Join a ranger for a guided walk along the Bluff Trail to learn about fire ecology and search for evidence of fire activity.

TREE TREK

Discover Congaree National Park's primeval forested floodplain. Experience the extraordinarily diverse wildlife while walking among the towering trees.

TREES WITH KNEES

Join a Ranger to learn some fascinating facts about the Bald Cypress and the ongoing debate about the function of its knees. Are they snorkels or anchors?

TRICKY TRACKS

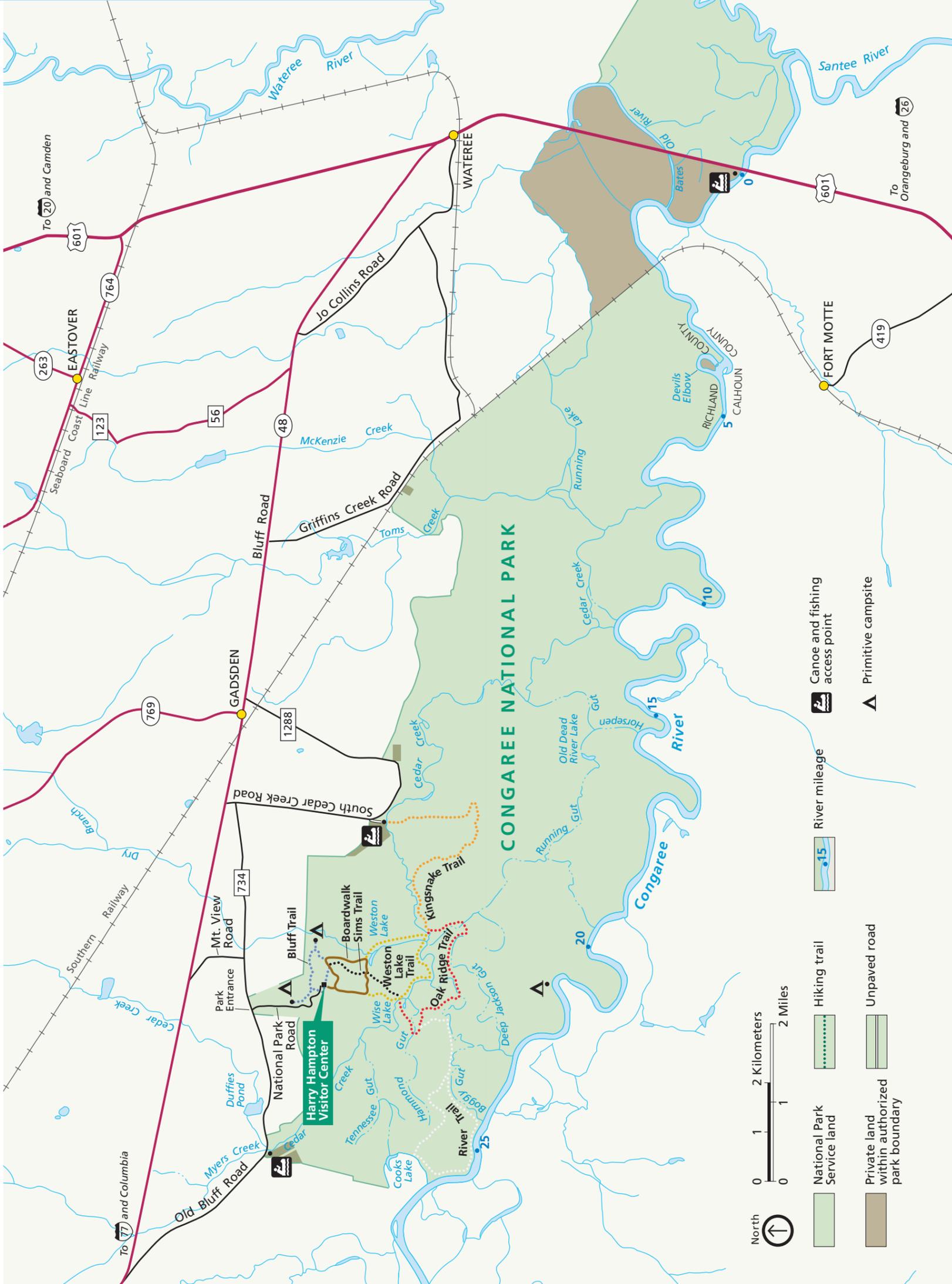
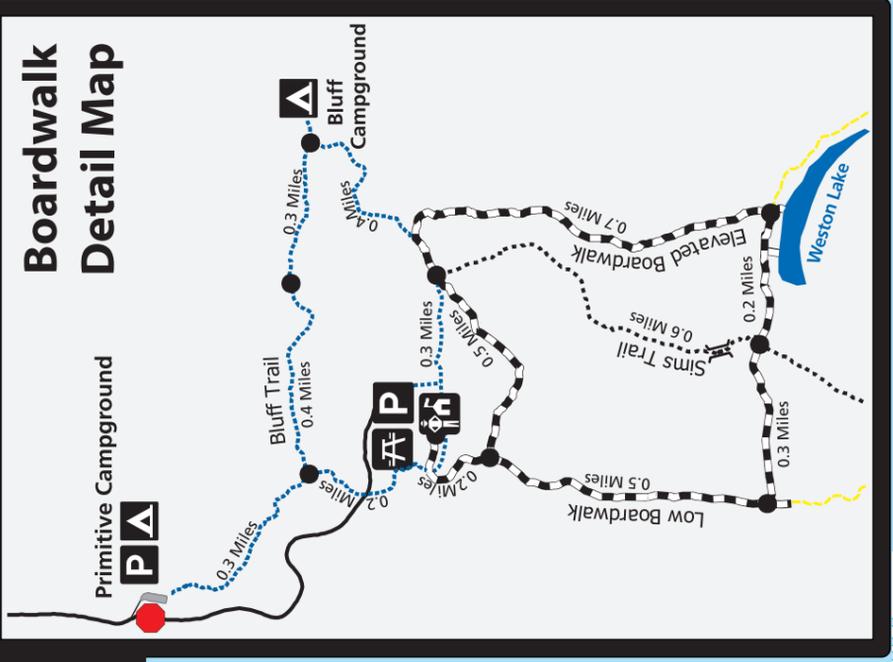
Hey Kids! Have you ever wondered whose footprints you were following in the park? Join a ranger for some games that will help you recognize animal tracks and then search for some along the trail.

WESTON LAKE WILDERNESS HIKE

Immerse yourself in a designated Wilderness Area as you hike 4.5 miles on the Weston Lake Trail. Perhaps you'll spot a River Otter in Cedar Creek!

WHO CAME BEFORE

Join a ranger on a hike through time. Learn about the people who ventured into Congaree before it became a park.



Trail Descriptions

Trail mileage is given to indicate one-way travel for each trail. For a detailed trail map, visit the Harry Hampton Visitor Center.

Boardwalk: 2.4 Miles

Sims Trail: 1.2 Miles

Bluff Trail: 2.1 Miles
Blue Blazes

Weston Lake Loop Trail: 2.5 Miles
Yellow Blazes

Oakridge Trail: 3.2 Miles
Red Blazes

River Trail: 5.0 Miles
White Blazes

Kingsnake Trail: 3.6 Miles
Orange Blazes