



Boardwalk Talk

Spring 2011

Superintendent's Message

Welcome to Congaree National Park! Throughout 2011 we will be celebrating the 35th anniversary of the park. In 1976, the original park lands were designated as Congaree Swamp National Monument, a unit of the National Park Service. In 2003, the park was expanded in size and changed designation to become Congaree National Park, the 57th park site in the nation to achieve this honor. 2011 is an exciting time to visit the park, as there will be special events held throughout the year to celebrate this milestone in the park's history. In addition, our annual celebration of the natural resources of the park, NatureFest, will be held this April, so be sure to return for two days of festivities. Check the calendar or ask a ranger for other program information.

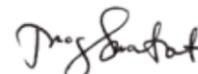
Spring at Congaree provides visitors with the exciting opportunity to witness the changing of the seasons in our bottomland floodplain forest. Temperatures are warming, with gorgeous mornings and evenings providing for great hiking. As the leaves begin to return on our deciduous trees, many of our migrating avian friends also return to the forest, so spring is also an excellent time for birding in the park. Come out before dawn one morning and experience the wonderful cacophony of our "dawn chorus."

I'd also like to take this opportunity to welcome our new Exotic Plant Management Team to the park. This group of talented individuals is working with us via a partnership with the Stu-

dent Conservation Association (SCA). They will be based here at Congaree National Park, but will be traveling to many other National Park Service sites in our region to remove and treat areas for exotic plants. The folks that make up this team come to us from all over the U.S. and will be working hard to support resource management goals in each park they visit. This labor-intensive field work is essential to protecting the native plants that exist in our park units, so best wishes to this team as they embark on a long season of important work! See future editions of the *Boardwalk Talk* for more information on where they have been and what this team has accomplished.

On a final note, don't be alarmed if you see that there is an area along the entrance road that has been recently burned. Congaree National Park is one of many parks and protected areas in the U.S. that uses prescribed burning to reduce fuels (that can contribute to more intense natural fires) and for resource management objectives aimed at maintaining a healthy forest ecosystem. This spring, we'll be burning an area near the entrance road. Ask the front desk if you'd like additional information on our fire program and see inside this edition of the *Boardwalk Talk* for an article on this important part of what we do to protect the resources of your national park!

Best to you for a wonderful season,



Tracy Swartout



Tracy Swartout, Park Superintendent

Join us for NatureFest 2011!

Corinne Fenner, Park Ranger

On the weekend of April 16 and 17, we will be holding our annual NatureFest event, celebrating National Park Week (April 16-24), National Junior Ranger Day, Earth Day (April 22) and the biodiversity of Congaree National Park. Join us for the weekend in your National Park!

Saturday begins with "Welcome Back Wood Warblers," an early morning walk to listen for the birdsong chorus and to identify some of the neo-tropical migrants

that have arrived for summer. The day continues with guided canoe tours led by park rangers and park partners Adventure Carolina and River Runner Outdoor Center.

At the Harry Hampton Visitor Center, the Carolina Raptor Center will conduct programs at ten, twelve, two, and four on Saturday. Learn about the birds of prey that have a home in Congaree and see these live birds up close.

A variety of guided walks and Junior Ranger activities will take place throughout the weekend. All kids will receive special Junior Ranger Day gifts for visiting their national park.

On Sunday, join South Carolina naturalist Rudy Mancke for a walk in the old-growth forest. Space is limited; reservations can be made by calling (803) 776-4396. A detailed schedule of events can be found on page five.



Canoe Tour Reservations

Reservations for canoe tours in the 2nd quarter of 2011 (April 1 - June 30) will open March 15. Call (803) 776-4396 to make a reservation. See pages four and five for more information.



Oxalis blooms during spring at Congaree

John Paul

EXPERIENCE YOUR AMERICA™

To:

Congaree National Park
100 National Park Road
Hopkins, SC 29061



Emergencies

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





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.

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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.

EXPERIENCE YOUR AMERICA™

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* in the backcountry. 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. In addition

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



Elevated Boardwalk

FISHING

All waterways except Weston Lake are open to fishing with a valid South Carolina 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 four and five. 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 is 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, and grills is available on a first-come, first-served basis at the Harry Hampton Visitor Center.

Paddling through the Park

William Privett, Park Ranger

There is no better season to experience the outdoors than spring. When the warmer temperatures arrive, leaves begin to bud and flowers bloom, creating a more comfortable and colorful scene. Many visitors come to the park to enjoy this wonderful time of year along the Boardwalk and other popular hiking trails. Those who want to get an up-close and personal look at the park, an in-depth and more visceral experience within the woods, should grab a boat and paddle and take to the forest atop the one thing that makes this park so special: water.

Although Cedar Creek is the main body of water flowing through Congaree National Park, the Wateree and Congaree Rivers also provide great paddling opportunities. The Congaree River flows from Columbia and forms the southern boundary of the park, while the Wateree River forms the eastern boundary. Both are wide flowing rivers that see many different user groups. Cedar Creek is a

small black-water creek that runs through the interior of the park, on its way down to the Congaree River. It is only open to non-motorized boats because it runs through a designated Wilderness area. During the winter months, the Congaree River will occasionally leave its banks and cover much or all of the floodplain inside the park, helping to enrich the soil.

There are three access points available for launching boats in the park. Cedar Creek can be accessed at the Bannister Bridge canoe access on Old Bluff Road and along South Cedar Creek Road, at the Cedar Creek canoe access. The Congaree River can be accessed on Highway 601, at Bates Bridge Landing. Both Bannister Bridge and Cedar Creek access areas require a short walk from the parking area to the creek itself.

Paddling Congaree National Park can be done as an out-and-back trip or by shuttling cars between access points. Cedar Creek Landing is the best launch for an

out-and-back paddle. There are plenty of picturesque spots along the creek to be enjoyed and the length and distance can be as long or short as desired.

The paddle from Bannister Bridge Landing to Cedar Creek Landing is a favorite of many paddlers. This six-mile float starts with many sharp curves but soon straightens out and runs near many of the hiking trails within the park. For a longer excursion, one can make the 20-mile trip from Cedar Creek canoe access to Bates Bridge Landing. This route includes seven miles on Cedar Creek before it runs into the Congaree River for the remainder of the trip. The truly adventurous paddler can tackle the 50-mile Congaree River Blue Trail and the 80-mile Wateree River Blue Trail. Maps of these trails are available at the Harry Hampton Visitor Center. Backcountry camping is allowed anywhere in the park. Camping must be at least 200 feet from a waterway or trail. Backcountry permits can be obtained for free at the Harry Hampton Visitor Center or via telephone up to 30 days in advance.

Book Review

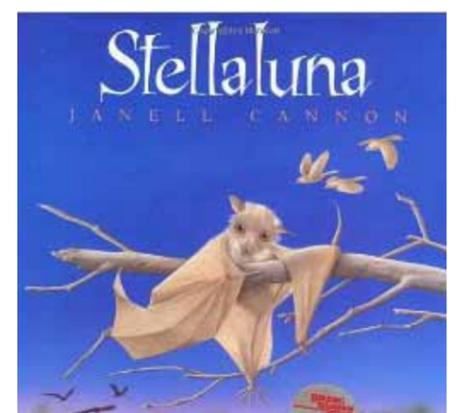
Jane Weilert, Park Volunteer

If you look closely at dusk in the deep forest of the Congaree, you may be lucky enough to see bats leaving their hollowed out trees for their evening meal. These very interesting and misunderstood mammals use their SONAR to track and capture insects (of which we have plenty). Besides keeping the insect population down, they are also responsible for pollination of night-blooming trees and plants. There are seven species of bats that call this old-growth forest home.

Stellaluna (Harcourt, \$16) is a children's story about a bat. Author and illustrator Janell Cannon, tells a classic tale of a misfit little bat in the tradition of the *Ugly Duckling*. *Stellaluna* is a baby fruit bat who becomes separated from her mother and is taken in by

a bird family. She does her best to fit in by sleeping in a nest, eating insects, flying during the day and standing on a branch, but feels uncomfortable doing so. As happens in these types of stories, *Stellaluna* is reunited with her mother and realizes she fits right in when hanging by her feet, eating fruit and flying at night, but she remains friends with her adopted bird family. The book ends with a conversation between *Stellaluna* and her bird family, "How can we be so different and feel so much alike? And how can we feel so different but be so much alike?.....Because we're friends..." This is certainly a lesson for us all. Janell Cannon has also written about a hyena, a green tree snake and a cockroach, all with a life lesson to be learned. *Stellaluna* can be found in

the bookstore at the Harry Hampton Visitor Center. Look inside the hollow tree in the visitor center and you will see a model of a bat family.



Burning Congaree National Park

Terri Hogan, Ecologist

Fire! Smoke rises in the distance and you can hear the crackle of burning brush. Yellow-shirted sentinels can be seen through the haze standing guard over the fire's perimeter; some are even dropping fire as they walk through the forest. What is going on here? You are witnessing a prescribed burn. Just like a physician's prescription to improve your health, fire is prescribed to improve the health of Congaree National Park's upland pine communities.

The benefits of prescribed fire are many. Heavy fuel loads, including dense woody understory, brush, downed trees, and leaves have built up over years of fire suppression. Prescribed fire reduces that fuel, preventing catastrophic fires like those seen in recent years in the western United States and also here in the southeast. Fuel reduction helps keep all of us - our homes, property, and the wild places we love - safe.

Fire is also an important tool for land management. It has a long tradition in the United States; Native Americans used fire to manage surrounding landscapes. Farmers used fire to prepare the ground for crops and to stimulate the growth of grass to improve grazing lands. Today, land managers use fire to reduce competition in timber stands and to improve habitat for wildlife. Growing season burns are particularly effective for controlling trees and shrubs like sweetgum and maple that compete with canopy trees for space, light, and nutrients. Land managers here at Congaree National Park also use prescribed fire for ecological restoration.

Fire has a place in many native plant and animal communities with natural fire cycles ranging from one to 50 years or more. Burning has many ecological

benefits including promotion of seed germination, flowering, and resprouting of fire-adapted native plants. Burning can even help control forest pests including ticks and chiggers.

A prescribed burn is conducted under carefully controlled conditions. These conditions are in place to ensure that the



Firefighter creating a fire break

goals of land management are met, tree mortality is reduced, the spread of fire is controlled, smoke movement to adjacent landowners and transportation corridors is limited, and all those assisting with the prescribed burn as well as the local community are kept safe.

Before any fire is lit, a detailed prescription is written. Among the factors prescribed are the location of fire breaks to contain fire within the burn unit and the environmental conditions under which the burn can be conducted such as wind direction, maximum wind velocity, and

minimum humidity levels. Factors such as location of water sources, number of fire engines and number of certified fire fighters on site during a burn must be considered.

Additionally, a permit to burn must be granted by the South Carolina Forestry Commission. A permit will not be granted if conditions are not right. A dedicated fire crew and crew boss from Cumberland Gap National Historical Park conduct prescribed fire operations at a number of parks including Congaree National Park. This highly trained and professional National Park Service Fire Module's primary duty is to conduct prescribed burns and fight wildfire. Congaree's certified fire fighters also assist with burn operations in the park and provide guidance to the Cumberland Gap crew for the park's ecological objectives during each prescribed burn.

Why do we conduct prescribed burns at Congaree National Park? The primary goals are to reduce fuel loads and restore the upland longleaf pine ecosystem within the park. Longleaf pine communities once ranged from Texas to Virginia covering much of the coastal plain. Today, only remnants of this vast forest remain. Although logging and land clearing are the primary reasons for the loss of longleaf pine, fire suppression has also played a role. The longleaf pine and its ecosystem are fire dependent. Seeds of longleaf pine must land on mineral soil to germinate. Fire exposes such mineral soils and reduces competition from other woody species, making room for newly germinated seedlings.

The seedling or "grass stage," so called because longleaf pine seedlings strongly resemble tufts of grass, may persist for

seven years or more. During this phase, resources are directed to root development, allowing seedlings to readily re-sprout from the root collar after fire. This also allows grass-stage plants to bolt up towards the sun after the roots have developed sufficiently. When the young plant begins to bolt, it can grow up to three feet in one growing season.

The bark of longleaf pine also exhibits an adaptation to fire. It is thick and layered to insulate the cambium, or living portion of the trunk, from the fire's heat. This layering also protects the cambium from damage as the outer bark layers peel off and fall when burned. This immediately removes heat from the trunk. The longleaf pine ecosystem harbors a diverse array of plants and animals including rare and unique species like the fox squirrel and the Federally Endangered Red-cockaded Woodpecker.

Do not be alarmed if you see smoke rising from Congaree National Park in March or April. A host of yellow-shirted fire fighters will be on hand to direct and monitor the operations. We are prepared to take care of this valuable resource for future generations.

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.



Pets in the Park



Pets are welcome at Congaree National Park; however, they are not permitted on the Boardwalk. Pet 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 biodegradable bags which are located at the Primitive Campground and at the beginning of the Bluff Trail outside the Harry Hampton Visitor Center. Dispose of these bags in any outdoor park garbage can.

Birds in the Neighborwood

Kathleen O'Grady, Park Ranger

One of the most beautiful bird songs that can be heard at Congaree National Park is sung by the wood thrush (*Hylocichla ustulata*). This bird is one of the many neo-tropical migrants that will be winging their way back from Central and South America to spend the summer here in the forest. This thrush is often heard more than seen. According to the Cornell Lab of Ornithology, the wood thrush, like other thrushes, has a beautiful song which is made possible by a special adaptation called a syrinx. The syrinx is a sound box that allows a bird to sing two notes at the same time and harmonize with its own voice.

Currently on the National Audubon Watchlist, it has become the "poster bird" of neo-tropical migrants. This population has undergone a decline of forty percent since the 1960s. The wood thrush, like many bird species, will often return to the same territory year after year. This behavior, known as "site fidelity," illustrates the challenges to nesting success and the importance for nesting territory to remain undisturbed.



Wood Thrush

Distinguishing field marks of the wood thrush include a reddish-brown back, a white eye ring and a white breast punctuated with bold dark spots. A ground forager, the wood thrush's diet includes berries as well as moths, caterpillars, centipedes and ants. One unique habit sometimes displayed by bird species such

as the wood thrush is the practice of "ant-ing." This behavior takes place when a bird picks up ants and rubs them on its feathers. Scientists from Cornell think that this could be a way of "acquiring defense secretions for medicinal purposes or to supplement preening oils." The earliest recorded date of the wood thrush returning to the Congaree National Park is March 30th. Get ready to stop, look and listen for the wood thrush as spring has arrived.

If you would like to learn more about this neo-tropical migrant and others, sign up for the "Welcome Back Wood Warblers" workshop and walk on April 16 being held during NatureFest starting at 8:30 a.m. Another opportunity to listen for birds will be on May 1, International Dawn Chorus Day which involves watching the sunrise and enjoying the songbird symphony. This event is dedicated to the late Robin Carter, park volunteer and avid birder, who shared his passion and knowledge of birds with all who crossed his path.

APRIL 2011

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1 1:30p Skins & Bones	2 9:00a Guided Canoe Tour 9:30a Nature Discovery 1:30p Tree Trek
3 9:00a Guided Canoe Tour 1:30p Skins and Bones	4 1:30p Tree Trek	5	6	7 9:30a Birds & Branches 1:30p Flat Hat Chats	8 1:30p Wise Lake Wander	9 9:30a Nature Discovery 1:30p Weston Lake Wilderness Hike
10 1:30p Weston Lake Wilderness Hike	11	12	13 1:30p Who Came Before	14 1:30p Who Came Before	15 1:30p Flat Hat Chats	16 NatureFest!
17 NatureFest!	18	19	20	21 1:30p Amazing Adaptations	22 1:30p Nature Discovery	23 1:30p Flat Hat Chats
24 9:00a Guided Canoe Tour 1:30p Amazing Adaptations	25	26	27	28 1:30p Tree Trek	29 1:30p Flat Hat Chats 8:00p Owl Prowl	30 9:00a Guided Canoe Tour 1:30p Tree Trek

MAY 2011

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 9:00a Guided Canoe Tour 1:30p Skins & Bones	2	3 1:30p Congaree Loblollies	4	5 1:30p Congaree Loblollies	6 1:30p Weston Lake Wilderness Hike	7 9:00a Guided Canoe Tour 9:30a Nature Discovery 1:30p Flat Hat Chats
8 9:00a Guided Canoe Tour 1:30p Tree Trek	9	10	11	12 1:30p Flat Hat Chats	13 1:30p Flat Hat Chats	14 9:30a Nature Discovery 1:30p Flat Hat Chats
15 9:00a Guided Canoe Tour 1:30p Skins & Bones	16	17	18	19	20 1:30p Tree Trek 8:00p Owl Prowl	21 8:30a Butterfly Count Training 9:30a Nature Discovery 1:30p Weston Lake Wilderness Hike
22 1:30p Tree Trek	23	24	25	26 1:30p Flat Hat Chats	27 1:30p Weston Lake Wilderness Hike	28 9:00a Guided Canoe Tour 1:30p Tree Trek
29 9:00a Guided Canoe Tour 1:30p Tree Trek	30 1:30p Amazing Adaptations	31				

JUNE 2011

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1	2 1:30p Flat Hat Chat	3 1:30p Nature Discovery	4 8:30a Butterfly Count Training 9:30a Nature Discovery 1:30p Tree Trek
5 9:00a Guided Canoe Tour 1:30p Skins & Bones	6 1:30p Tree Trek	7	8 1:30p Birds & Branches	9 1:30p Tree Trek	10 1:30p Nature Discovery 8:00p Owl Prowl	11 8:30a Butterfly Count 9:30a Nature Discovery 1:30p Flat Hat Chats
12 9:00a Guided Canoe Tour 1:30p Tree Trek	13 1:30p Tree Trek	14	15	16 1:30p Flat Hat Chat	17 1:30p Amazing Adaptations	18 9:30a Nature Discovery 1:30p Tree Trek
19 9:00a Guided Canoe Tour 1:30p Weston Lake Wilderness Hike	20	21	22	23 1:30p Flat Hat Chats	24 1:30p Flat Hat Chats	25 9:00a Guided Canoe Tour 1:30p Tree Trek
26 9:00a Guided Canoe Tour 1:30p Skins & Bones	27 1:30p Tree Trek	28 1:30p Flat Hat Chats	29	30 1:30p Flat Hat Chats		



Program Descriptions

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.

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 TRAINING

This citizen science training program starts with a presentation about the butterflies of Congaree and how to identify them. Participants will then practice identification during a short guided walk. All are welcome. Reservations required. Call (803) 776-4396.

BUTTERFLY COUNT

This annual count with the North American Butterfly Association helps scientists monitor butterfly populations across the continent. All are welcome! Reservations required. Call (803) 776-4396.

CONGAREE LOBLOLLIES

Stroll down the 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!

FLAT HAT CHATS

Listen and learn as rangers give 15 minute talks on different topics including Congaree history, fire, the creation of the park, 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; Reservations for 2nd quarter of 2011 will open March 15th. Call (803) 776-4396.

NATURE DISCOVERY HIKE

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

NATUREFEST!

A variety of walks, talks, canoe tours, and exhibits will take place from 10:00 a.m. to 4:00 p.m. All events are free of charge. Canoe tours and the Owl Prowls require reservations. Call (803) 776-4396 to make a reservation.

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 for 2nd quarter open March 15th. Call (803) 776-4396.

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.

TREE TREK

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

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!

WISE LAKE WANDER

Join a ranger for a stroll to Wise Lake, one of the oxbow lakes left behind by the Congaree River.

WHO CAME BEFORE

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

NatureFest 2011

Saturday

8:30 a.m. "Welcome Back Wood Warblers" Join us for an early morning walk, listen to the chorus and identify Congaree songbirds. Advanced reservations required. Call (803) 776-4396.

9:00 a.m. "Canoeing Congaree (Advanced)" Take a trip of a lifetime! Paddle six miles from Bannister Bridge Canoe Access to Cedar Creek Landing. This tour is for the experienced paddler who is ready to get muddy and portage over fallen trees. Advance reservations required. Call (803) 776-4396.

9:00 a.m. "Canoeing Congaree" Take the trip of a lifetime! Paddle into wilderness where you will see giant bald cypress and Tupelo trees. Advance reservations required. Call (803) 776-4396.

9:30 a.m. "Nature Discovery" Immerse yourself in a magical forest and witness it's giant trees and wildlife.

10:00 a.m., 12:00 p.m., 2:00 p.m., 4:00 p.m. "Ravaging Raptors" Learn about birds of prey during this live bird presentation.

10:00 a.m., 3:00 p.m. "Climate Change at Congaree" Learn about the realities of climate change in the Southeastern United States and the potential consequences for Congaree National Park during this presentation/discussion.

11:00 a.m. "Canoeing Congaree" Take a trip of a lifetime! Paddle into wilderness where you will see giant bald cypress and tupelo trees. Advance reservations required. Call (803) 776-4396.

11:30 a.m. "Walking the Wetland" Walk with a naturalist and discover this amazing floodplain forest!

11:00 a.m. "Owl Puke" Kids! Ever wanted to pull apart owl pellets? Here's your chance to find out what Mr. Owl ate for supper! Limited to 20 people per session.

12:15 p.m., 3:00 p.m. "Kids' Stuff" Find out what squirms, wiggles, and slurps in the mud at the park.

1:00 p.m. "Colors of Congaree" Kids! Discover the wonderful colors of nature.

1:00 p.m. "Finding Giants" Take a five (5) mile hike in an ancient forest and hunt for record trees. Reservations required. Call (803) 776-4396.

1:30 p.m. "Weston Lake Wilderness Hike" Take a hike! Immerse yourself in the Congaree backcountry on this 4.5 mile hike.

1:30 p.m. "Snakes Alive" Learn about the snakes of Congaree National Park, and then join a snake expert to look for snakes along park trails.

2:00 p.m. "Skins & Bones" For kids of all ages! Have you ever wondered what animals are wearing under and over their skins? Join a ranger for a look at some of the skulls and furs of the Congaree mammals.

3:30 p.m. "Gaps & Saps- Succession in the Forest" Walk through the forest and learn some of nature's secrets.

8:30 p.m. "Owl Prowl" Have you ever heard a barred owl hoot "Who cooks for y'all?" Talk to barred owls and look for flying squirrels and fireflies on this 2½-mile walk. Advance reservations required. Call (803) 776-4396.

Sunday

9:30 a.m. "Nature Discovery" Immerse yourself in a magical forest and witness it's giant trees and wildlife.

11:00 a.m. "Butterfly Blitz" Get close to butterflies for a presentation and a guided walk.

1:30 p.m. "Weston Lake Wilderness Hike" Take a hike! Immerse yourself in the Congaree backcountry on this 4.5 mile hike.

1:30 p.m. "Rudy Mancke Spring Walk" Join naturalist Rudy Mancke and discover what is blooming this spring! Advanced reservations required. Call (803) 776-4396.

2:00 p.m. "Zoology Lab" Learn about the mammals that call Congaree home, including river otters, beavers and bobcats.

3:00 p.m. "Primitive Technologies" Crafting primitive tools from plants and animals found in South Carolina is nearly a lost art.

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, 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.

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.



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.

CongaResearch Files: Loblolly Champions

By Chris Ramaglia, Natural Resource Education Ranger and David Shelley, Ph.D., Education Coordinator

Congaree National Park is home to many exceptionally large loblolly pine trees (*Pinus taeda*), including the National and State Champion Loblolly Pine. Not only do these large trees leave a lasting impression on visitors, they also provide a unique opportunity for scientific study.

What is a loblolly? Also called Arkansas pine, North Carolina pine or Oldfield pine, loblolly pine trees account for over 50 percent of the pine tree population in the southeastern United States. Abundant because they have been planted for timber, loblollies also grow quickly in “light gaps” where other trees have been killed by fire, storm damage, or human activity such as clearing and logging. Although most loblolly pine trees are found in the upland forest, they can also grow in relatively wet soil. The word “loblolly” is a Native American term thought to mean “mud puddle.”

A mature loblolly pine has a straight lower trunk that lacks branches and an open crown that may tower above the surrounding trees. The distinct scaly, reddish-brown bark plates can be larger than a human hand and more than an inch thick. Loblolly pine needles are generally six to nine inches in length and arranged in bundles of three. The pine cones are three to six inches long and cylindrical with scaled tips and sharp points.

What is a “champion” tree? Different species of trees have optimal sizes. A holly tree might look humbled beside a massive loblolly, but still be a champion holly tree. A South Carolina state champion tree is the largest known living tree of its kind in the state of South Carolina. A national champion tree is the largest known living tree of its kind in the United States of America. The American Forestry Association uses a formula to compare trees using

a point system:

Total Points = Circumference (inches) + Height (feet) + ¼ the Average Crown Spread (feet). The circumference of the tree trunk is determined from a measure of “Diameter at Breast Height,” or “DBH.” The overall tree height is measured using a known distance from the trunk and the angle to the top of the tree or the distance using a laser range finder. “Crown spread,” is the average distance across the entire crown area. The tree with the most points wins as the champion of its species. Researchers measured



Park Ranger beside the Richland County Pine

Steven McNamara

the National Champion Loblolly Pine at Congaree – it is 169.4 feet tall (taller than the Statue of Liberty)! It has an above-ground volume of 1,973 cubic feet (as much as three compact cars, and that doesn’t even include the roots)!

Congaree National Park is home to a significant population of large loblolly pine trees in the uplands as well as in the floodplain. Most of the loblolly pine trees in the floodplain are found alone or in scattered patches near the northern bluffs. In the 1970s, researchers reasoned that because most of the loblolly pine trees are about the same size, they must be about the same age. They hypothesized that these pines represented one generation that grew in the forest after a single, large disturbance (e.g., fire or hurricane) that created several light gaps.

In 1992 and 1993, researchers at Auburn University tested this hypothesis with five objectives: map loblolly pine trees, measure the DBH of selected trees, take “tree cores” of selected trees to count tree rings and determine tree ages, search for evidence of past fire in tree cores and soil samples, and survey adjacent tree species. A few highlights of this research include:

1. The 71 trees cored ranged in age from 33 to 227 years old, but most fell into distinct age groups. The largest group (almost 45% of the population) sprouted between 1830 and 1860. The next largest group (almost 25% of the population) sprouted in a clearing between 1930 and 1940. Three other small groups (almost 20% of the population together) sprouted between 1900 and 1910, 1860 and 1870, and 1800 and 1830 respectively. Some patches clearly showed younger trees growing in the center of a ring of older trees.

2. The oldest loblolly pine tree studied was the Richland County Pine. It was about 227 years old in 1992, which translates to about 246 years old today. This means that it would have been 15 years old when Francis Marion fought the Battle of Fort Motta in May of 1781.

3. Tree age and size are not well related. Some very large loblolly pines were much younger than trees that were much skinnier and older.

4. No significant evidence of fire, such as charcoal was found in the tree cores or the soil.

Based on these results, researchers concluded that the champion loblolly pine trees at Congaree National Park do not represent a single generation that grew after a large fire disturbance. Researchers concluded that there were several periodic, localized disturbances.

Eventually, all of Congaree’s trees – including champion loblollies – will fall, by natural causes such as lightning, wind, fungus, and pests. New loblolly pine trees always have a chance of growing in light gaps opened by fallen trees. Given the large existing population of loblolly pine trees, there are many trees out there that are ready to become champions in their time.

Butterfly Fun!

Help park rangers and scientists collect information about butterflies at Congaree National Park. Learn how to identify butterflies and practice your skills at two training sessions on May 21 and June 4 starting at 8:30 a.m. Then join us for the North American Butterfly Association Annual Count on June 11 starting at 8:30 a.m. Please sign up for these programs by calling (803) 776-4396.

Floodplain Flows: Studying water in Cedar Creek

Ricker Snow, Park Intern

Greetings from Congaree National Park’s resident hydrology intern! My name is Ricker Snow and I recently graduated from the University of North Carolina at Chapel Hill with a degree in Environmental Science. Through my coursework, I gained some experience in water quality research and environmental modeling. I love the outdoors and the opportunity to expand my knowledge about hydrology through fieldwork. I find research at Congaree National Park particularly rewarding.

I’ve been working at the park since September of 2010 as an intern through the Student Conservation Association (SCA). The SCA works with partners like the National Park Service to sponsor service learning internships nationwide. These internships are opportunities for students and recent graduates interested in conservation to get valuable professional experience. I work primarily with the Resource Management Division at Congaree National Park to improve our understanding of hydrology across the floodplain. My internship contributes to on-going research to monitor water quality on Cedar Creek,

monitor groundwater levels, and to work with federal, state and other partners on various aspects of water quantity and quality in the floodplain.

Since my arrival, I have set up a surface water observation network of stream gauges to monitor the water levels at several locations around the park. I helped select sites and designed, constructed, and installed the monitoring equipment with help from resource education ranger Chris Ramaglia and former geology intern Billy Armstrong. To install the monitoring gauges, we dug a hole (ten feet deep and four inches wide) at each gauge site using a hand auger. In each hole, we set a PVC “anchor” pipe on top of which we attached a camouflaged PVC stream gauge that I designed. The design allows water to rise and fall as the stream level goes up and down, while also protecting a data logger that automatically records the water level and temperature every 30 minutes.

The water level, or “stage,” is an important measurement, but of more interest is

the volume of water moving through the channel, or “discharge.” Stage itself is not representative of discharge, but they are related. Their relationship depends on many variables such as the shape and size of the channel, the type of stream bed material (i.e. gravel, sand, fine silt, etc.), and the presence of debris such as roots and logs. Although the relationship is complicated, it is possible to model it by measuring the discharge at many different stage levels.

Measuring discharge is far more difficult and time consuming than measuring stage. First, the depth and velocity (speed and direction) are measured at several points across the channel using a special device. Then, the discharge at each of these points is calculated from the depth and velocity measurements. The sum of all of these smaller calculations is the total discharge at that stage level. These measurements and calculations will be repeated at many different stages. Next, all the data will be used to make a mathematical formula that relates the stage and discharge. Once the relationship is

established, it will be possible to estimate the discharge based on the stage measurements and turn the record of stage into a record of discharge.

To complicate matters, the channel shape and size is always changing. This means that the relationship between stage and discharge is always changing too. Due to these changes, new measurements will have to be made periodically to monitor the channel size and shape in addition to taking new discharge measurements.

This project is just the first phase of on-going work that will enhance water management practices and improve other research efforts involving water quality, stream habitat mapping, groundwater and surface water interactions, erosion, deposition, and how floods change over time. It was exciting to have had the opportunity to lay the groundwork for the surface water observation network and to have helped pave the way for future hydrology interns. Thanks, Congaree!

Beavers of Congaree National Park

Kate Hartley, Park Ranger

Many native mammals make their home at Congaree National Park. One of the most fascinating of these is the beaver (*Castor canadensis*), well-known in North America as its range includes much of the United States and Canada. The beaver is the largest rodent in North America weighing between 44 and 60 pounds and averaging between three and four feet in length.

Beavers have short legs and, while quite awkward on land, they are superbly designed and adapted to living in the water. Their hind feet are webbed to help power their swimming strokes. Beavers can swim up to six miles per hour. They have a transparent inner eyelid that prevents injuries to the eye and helps them see underwater. Their ear canals and nostrils close to keep water out while diving. They can even seal off their cheeks behind their front teeth, enabling them to grasp and tow branches underwater. They also have dense oily fur that traps air next to their bodies making them waterproof. Beavers can remain underwater for up to 15 minutes before surfacing for air.

Beavers are strict herbivores that do not hibernate in winter. Their food source is rather limited during the coldest months of the year. They eat mainly tree bark and small branches and beavers store branches underwater for the winter by poking the ends into the muddy bottoms of streams and ponds. In the growing season, their food choices expand to include leaves, small twigs and aquatic plants. Beavers have great dexterity with their front paws and can twirl a small branch and gnaw the bark in a manner reminiscent of a human eating an ear of corn. The wood left over after they have eaten the branches is often used in building lodges and dams.

The expression “busy as a beaver” is a very apt description of this animal’s behavior; however, we don’t always get to observe them as they are largely nocturnal. They are especially busy in the fall when they reinforce their lodges

and dams. The entrances to their lodges – or bank burrows if they build their dens along streams or rivers – are underwater to prevent invasion by predators. Beavers build lodges and dams with sticks and branches, mud and rock or shells, so dam repair is an endless endeavor.

Unfortunately, there are times when flooding caused by beavers can submerge and kill trees, such as the beautiful hardwoods here at Congaree. Beavers are intent on building homes and feeding themselves, sometimes significantly altering landscapes.

It is thought that beavers mate for life. Baby beavers, also known as kits, are born with their eyes open and a thick coat of fur. They may take to the water in as little as a half an hour and are good swimmers in a matter of days. If they tire while swimming, they may get a ride on their mother’s back. The kits stay with their parents for two years and are then chased away in time for a new litter to arrive.

When the park is flooded, it is possible to paddle over a beaver dam on Cedar Creek and travel through the trees to a beaver lodge. When humans approach, beavers sound the alarm by slapping their tails loudly on the water. It is a thrill to observe these wonderful animals in action or even see some of the dams they have built along the creek here in Congaree National Park.

To see what incredible engineers beavers are, use your favorite search engine and look up “the beaver dam visible from outer space!” In northern Alberta, Canada, there is a beaver dam which is almost 3,000 feet long. That’s more than twice as long as the Hoover Dam. Scientists think several beaver families joined forces and took several months to construct this huge structure.

Source Material:

Whitaker, Jr., John O. *National Audubon Society Field Guide to North American Mammals*. New York, NY: Alfred A. Knopf, Inc., 1996.

Guided Canoe Tours: Reservation Policy

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 a park provided 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 four of this publication, and at www.nps.gov/cong.

Reservations can be made via telephone ONLY. Requests via voice-mail 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 1st quarter (January 1-March 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 (803)776-4396.

Individual tours

- Reservations taken quarterly. For the 2nd quarter of 2011 (April 1-June 30), reservations will open March 15th and will close when filled to capacity. For the 3rd quarter (July 1-September 30), reservations will open on June 15, 2011.
- 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

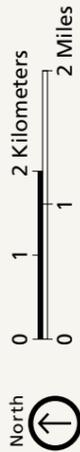
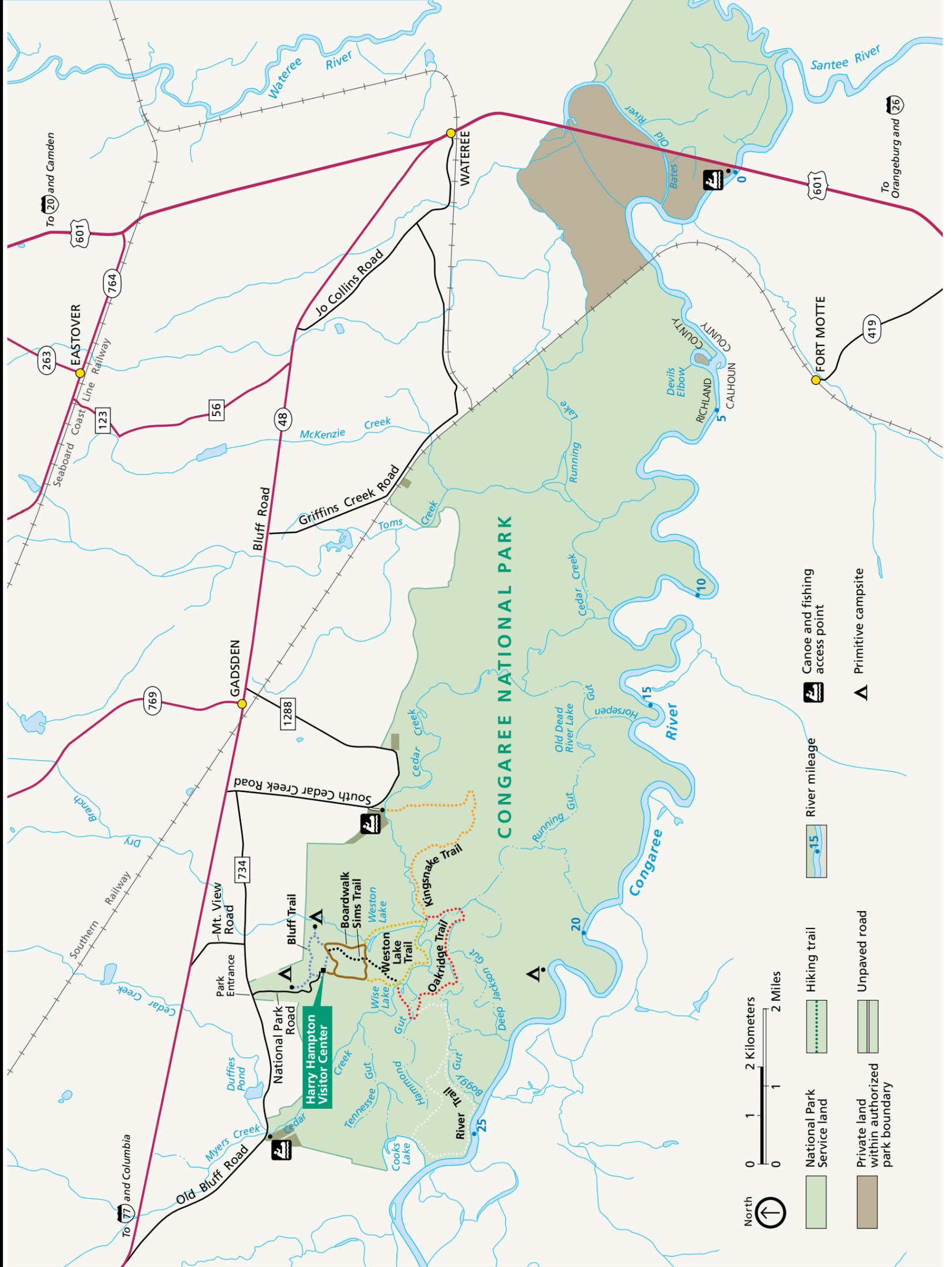
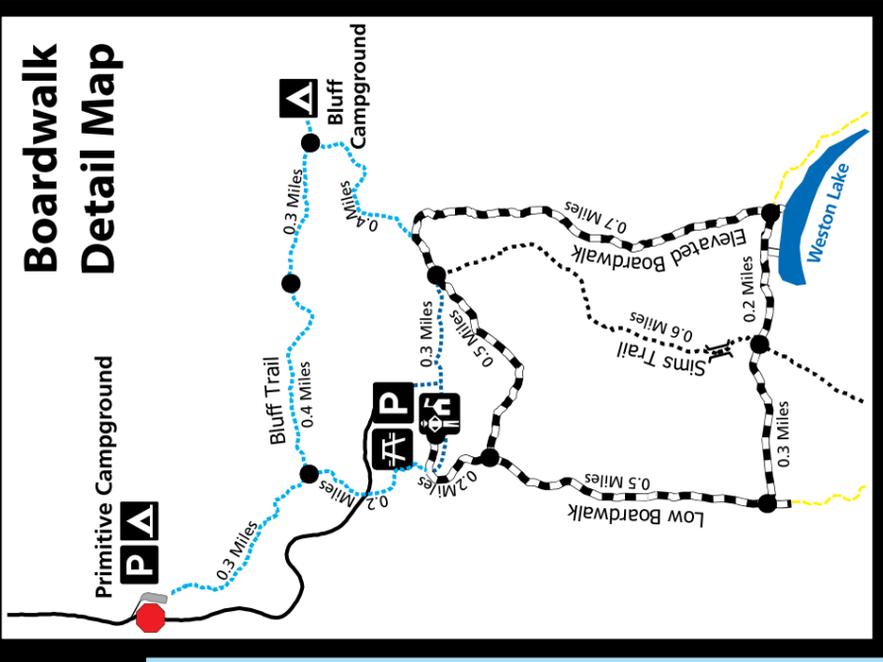
- Reservations taken quarterly. For the 2nd quarter of 2011, (April 1-June 30), reservations are closed. For the 3rd quarter of 2011, (July 1-September 30) reservations for groups will open April 1 and close May 15.
- Group size must be between 10 and 18 people, and be members of an organized group, club, or common affiliation.



Evidence of Beavers in Congaree



Paddling on Cedar Creek



- National Park Service land
- Private land within authorized park boundary
- Hiking trail
- Unpaved road
- River mileage
- Canoe and fishing access point
- Primitive campsite

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