



Friends of Congaree Swamp News

www.friendsofcongarree.org

Spring 2023

Save the date

National Trails Day

As part of National Trails Day on **Saturday, June 3**, Friends of Congaree Swamp members will meet at 9:30 a.m. at Bates Bridge landing on U.S. 601 to collect trash at the Congaree River boat ramp, parking lot and access road. We should be finished by 11:30 a.m.

Depending on attendance and time, some of us may drive to other sites along U.S. 601 to clean those as well. This is one of our required semiannual clean-ups as part of the Adopt-a-Waterway program sponsored by Keep the Midlands Beautiful.

Keep the Midlands Beautiful will provide trash pickers, trash bags, gloves, etc. to assist with the clean-up and we will use the dumpster on site to dispose of non-

*See **Save the date**, page 6*

Dogs on boardwalk at issue

In response to concerns about dog waste, dogs off leash and crowding from increased visitation, Congaree National Park recently created an open comment period on the 2013 policy allowing leashed dogs on the Boardwalk Loop Trail.

Friends opposed the policy at the time, based in part on a review of policies at other parks. We felt then as we do now that resource management considerations were not given equal weight, and the experiences of some visitors were given greater priority than the experiences of other visitors.

To prepare comments this time around, we visited the websites of the 62 National Parks to review their pet policies. Few parks were as pet-friendly as Congaree, even prior to the park's expansion of pet access to the boardwalk in 2013.

Currently, Acadia, Gateway Arches, Hot Springs, Cuyahoga Valley, New River Gorge, Petrified Forest, Shenandoah, White Sands and Congaree are the only national parks in the continental U.S. that allow pets on most of their trails and backcountry areas. Acadia, Crater Lake and Shenandoah have several restricted trails.



The majority of parks in the continental U.S. allow leashed dogs only on or near public use areas; i.e., wherever a motor vehicle can go, dogs can go.

Though several of the reasons cited for restricting pets are more relevant to surface trails and wilderness than boardwalks, warnings about the dangers of bringing dogs and people into close quarters should resonate even more when considering a leash policy for the Boardwalk Loop. Close quarters are inevitable, since even the use of a 6-foot leash cannot keep dogs and visitors separate.

The current policy presents dangers to vulnerable park visitors, including children, visitors with disabilities and visitors with fear of dogs. Further, the setting may be unfamiliar for dogs, creating

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President's Corner

Dr. John Grego

Land Development Code

It's been a while since we last wrote about Richland County's Land Development Code (see our Fall 2020 newsletter) and a great deal has happened since then.

Rather than cover too much ground, we'll focus on some aspects of the code that have drawn attention in Lower Richland and have consequences for the health of the streams that flow into the park. In particular, conflicts between density-based zoning (rather than zoning based on minimum lot sizes) and rural zoning densities have played out in interesting and unanticipated ways.

After the final land development code was passed by county council in November 2021 with only modest public interest, release of revised zoning maps caused a great deal of controversy as homeowners throughout the county found their neighborhoods zoned at higher densities than anticipated.

In addition to concerns about the zoning maps, residents reviewing the code itself expressed concerns with some of its provisions. The county restarted both the code and mapping process, beginning in May 2022 with the planning commission's review of the code and preparation of code amendments.

Perhaps nothing reveals shortcomings of

the current rural zoning code (RU) than the controversy over a 189-acre development along Ridge Road south of Leesburg Road. The county's comprehensive plan encourages low-density development in the Cedar Creek watershed, but RU zoning allows 3/4-acre lot sizes, or 249 units on this parcel.

Using density bonuses under the current Green Code (and proposed code), more open space is preserved and water quality is better protected, but the number of eligible lots increases as well—in this case by an additional 50 units.

The project does not require rezoning, and there are no other conditions in the code that the project fails to meet, so efforts to forestall more intense development in the upper portion of Cedar Creek's watershed, though well-organized and effective, have struggled to find leverage.

The new land conservation code likely would have precluded this development. New zoning categories are much less dense than the former RU designation. AG (Agricultural) allows one unit per 6 2/3 acres on average, while HM (Homestead) allows one unit per 3 acres on average. At these lower densities, large parcels could not be intensively developed unless they were rezoned, which provides the public with an effective recourse for modifying development plans.

Interestingly, lower-density zoning has encountered both support and opposition in Lower Richland. Some residents worry that lower densities for rural land will not allow traditional rural/agricultural activities on smaller parcels, though that can often be addressed by adjusting permitted uses for the zoning categories to allow traditional uses. Others would like to subdivide their land to share with relatives and are concerned that less-dense zoning could prevent that, thus breaking a chain of family land ownership.

And even those who support less dense zoning can have concerns with density-based zoning; neighbors can be uncomfortable with housing along their property line that appears more dense.

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Dr. John Grego, President Sharon H. Kelly, Editor

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Shelley awarded Order of the Cypress

Friends of Congaree Swamp presented Dr. David Shelley, the park's chief of Resource Stewardship and Science, with the Order of the Cypress at his departure party on April 19.

After almost 17 years with the park, David will move to a new position with the U.S. Forest Service, while continuing to reside in Columbia.

For many of us, our exposure to the scope of David's work came through the park's monthly lunch-and-learn program that David organized. The program covers academic research on the physical and life sciences, cultural history, citizen science, and park management.

David's first work at the park was with his advisor, Art Cohen. They contributed an article to our Fall 2005 newsletter on the muck swamp near the bluff edge, and their findings on the age of the former Congaree River channel and subsequent floodplain deposits have served as foundational work for both interpretive tours along the low boardwalk and further research of floodplain geology.

His field guide to Congaree River valley geology, "Bluff to Bluff," is another touchstone.

We have asked David to lead geology field trips for us, something he's done many times for professional colleagues

and other groups. We learned as much about David's approach to science and education as we did about the park's geology. David takes science and science education very seriously—and would always start his tours by sharing his interest in the epistemology of science—its underlying features and how they support scientific claims.

And this interest was also evident in David's work with the Learning Center. It brought him into contact and collaboration with countless researchers and educators over the years and David developed a deep expertise in many areas of research and resource management as a result.

In recent years, David provided leadership to organize the Congaree Biosphere Region as an effective voice in sustainable regional

growth and environmental stewardship. The biosphere initiative still has a way to go, but Cliff McCree, coordinator of the U.S. Biosphere Network, has been impressed by its efforts, and sees the coalition as one of the biospheres with the most potential nationally.

In the short term, we look forward to continuing work with David on the organizing committee of the 2024 Congaree Research Symposium. David hopes to continue contributing to the park and we look forward to continuing to work with him.



Dr David Shelley, left, receives the Order of the Cypress from Dr. John Grego, president of Friends of Congaree Swamp.



Shelley conducts a lunch-and-learn.

DHEC releases impaired waters list

The S.C. Department of Health and Environmental Control recently released its 303(d) list of impaired waters for both 2020 and 2022.

Water quality problems for the Congaree River, Wateree River and streams entering the park have been well-documented in earlier impaired waters lists, and the lists are useful summaries to understand the park's water quality problems. We reported on the 2016 303(d) list in our Spring 2016 newsletter, and that article provides some context to the more recent reports. Zinc was delisted at the U.S. 601 crossing of the Congaree River, though mercury continues to be a problem there.

There is some good news on the Wateree River. A monitoring site just upstream of the confluence with the Congaree River, and hence adjacent to the park, was listed as impaired for zinc in 2020, but then delisted in 2022.

Likewise, a monitoring site on the Congaree River at the park's western boundary was listed as impaired for *E. coli* in 2020, but delisted in 2022. *E. coli* is used as a measure of bacterial water quality. Its sources can include not only human waste, but animal waste from livestock, pets or wildlife.

Problems with the park's tributaries continue. Cedar Creek at Bannister Bridge is newly listed for *E. coli* contamination in 2022, and *E. coli* contamination noted in 2020 at Bridge B and South Cedar Creek landing continue.

Cedar Creek is the only Outstanding National Resource Waters in South Carolina, which provides some protection from escalating threats but no assurance of protection from pre-existing threats.

Over the years, we have reported on bacterial water quality impairment at Cedar Creek (Fall 2007) and a myriad of contaminants, including pharmaceuticals and organic waste indicators (Fall 2017). More recently, we have noted problems with artificially low flows (Summer 2022, Fall 2022), that can also result in 303(d) listing if they persist.

Likewise, Toms Creek at Red Bluff Road on the park's boundary is impaired for both pH and *E. coli*, with additional sites upstream impaired as well.

Aashka Patel and Buz Kloot of the

Citizen-science volunteer

Friends member Angela Valvasori expressed interest in water quality sampling last fall and quickly completed Adopt-a-Stream Freshwater Monitoring Certification.

Since January, she has sampled Myers Creek at Bannister Bridge, immediately upstream of the confluence with Cedar Creek.

It is difficult to reach definitive conclusions in only four months, but Angela has consistently detected bacteria water quality at slightly elevated levels (100-200 colony forming units/100 ml), though below regulatory limits. A dissolved oxygen reading of 4.0 ppm in April is particular cause for concern.

Myers Creek does not have a permanent

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University of South Carolina conducted a comprehensive study of bacterial water quality in the Toms Creek watershed in 2008-2010 and identified septic systems along Congaree Church Road and livestock farms as likely sources of bacterial contamination.

In their study, Toms Creek water quality was its worst at Bluff Road, attenuated downstream toward the park, and then improved within the park's boundaries.

Though water quality generally improves south of Bluff Road, clearly problems persist if Toms Creek at Red Bluff Road has been listed. Toms Creek has naturally low pH, so pH impairment is not as serious a concern as bacterial contamination.

Our Adopt-a-Stream water quality sampling largely complements and confirms these results. Sampling at Myers Creek consistently has found somewhat elevated *E. coli* levels, though not above regulatory limits, and recently recorded a troubling dissolved oxygen reading.

Our findings at Toms Creek and McKenzie Creek within the park's boundaries mirror the results of earlier studies, with bacterial water quality on McKenzie Creek somewhat higher than Toms Creek.

Volunteer

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DHEC water surface monitoring station, though there is a permanent station at Cedar Creek immediately below the confluence, so Angela's monitoring at such a strategic site is particularly useful.

Toms Creek has been monitored monthly now since August 2021. Visiting requires special permission from park law enforcement and coordination with an adjacent private landowner, in addition to a one-mile walk to the site.

In general, water quality has been good with *E. coli*



Angela Valvasori monitors water temperature in Myers Creek.

readings typically at 100 cfu/100 ml or below. DO is a little low in summer, between 5.0 and 6.0 ppm.

We had intended to sample McKenzie Creek year-round as well, but found only disconnected puddles or long dry reaches during the first summer and fall, with consistent flow only during the winter and spring. Winter and spring monitoring suggests somewhat lower water

quality in McKenzie Creek compared to Toms Creek.

Though not a part of the water quality monitoring protocol, insights gained on McKenzie Creek's low flow have proved helpful. It is a small watershed, with only a single large reservoir upstream.

Inspection of the creek both upstream and downstream of the reservoir during monthly sampling found little difference in flow, suggesting that management of the reservoir was not the primary source of the creek's seasonal woes.

By happenstance on a roadside birding trip, we noted a large beaver dam obstructing McKenzie Creek immediately upstream of the Griffins Creek Road bridge.

Signage at the bridge suggested efforts at beaver dam removal, but for now the beavers appear to have the upper hand.

The combination of small watershed and the large beaver dam are the likely culprits for a stagnant McKenzie Creek during the summer.



Water-quality monitoring equipment.

Grego

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The current code includes measures to alleviate some of those concerns—planted buffers and a common access to the development, rather than private driveways directly along main roads—but other methods may be more effective. “Lot

matching,” for instance, requires lot sizes along the exterior of a development to match adjacent properties.

Density-based zoning is often seen as an unalloyed good by conservation organizations, but county staff has expressed concerns that it can be used to push development into areas where it should not go.

Specifically, density-

based zoning reduces the cost of infrastructure, since developments are more compact, and hence require less infrastructure (i.e., roads and utilities).

In fact, this could be why the Ridge Road development proved practicable. The point is well-taken and quite sobering, though lower densities would have preempted such concerns.

Save the date

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recyclables. Light hiking boots, plenty of water, sun protection and a snack are recommended.

We will likely bird along Fork Swamp Trail afterwards, while cleaning litter along the way. Please contact John Grego at friendsofcongareeswamp@gmail.com or 803-331-3366 if interested.

Big Tree hike

On Father's Day, **June 18**, we will travel east of Weston Lake Loop Trail to visit big trees, including the Loblolly Pine with the greatest circumference of any in the park. Along the way, we will see large specimen Overcup Oak, American Elm and Swamp Chestnut Oak.

Depending on conditions, we will also try to visit a couple interesting large Baldcypress, then retrace our steps to Weston Lake Loop Trail.

Meet at the Visitor Center at 9 a.m. We should be finished by 1:30 p.m. This is not a long hike, though it will be off-trail and there will be one or two wet spots to negotiate. Regular hiking boots should be sufficient; bring a snack, insect repellent and water.

This outing is solely for members of Friends of Congaree Swamp and will be limited to 25 participants.

Contact John Grego at friendsofcongareeswamp@gmail.com or 803-331-3366 to register.

Butterfly count

This year's North American Butterfly Association Count will be held **Saturday, August 19**.

The August count produces a wonderful variety of butterflies in all areas of the park and new species continue to be found. Marty and David Kastner, members of the

Midlands Chapter of the Carolina Butterfly Society, are organizing the annual event.

Participants will spend the day counting butterflies along the trail system and within various habitats in the park. The count will last until about 3 p.m., weather permitting, though you can help out for just a couple hours or stay for the entire day.

We will meet at 9 a.m. at the Harry Hampton Visitor Center. All ages and experience levels are welcome. Appropriate clothing is required of all participants, including long pants and closed-toed shoes.

Butterflies like the sun, so bring sun protection and plenty of water. Bug spray, water, snacks, and a sack lunch are also recommended. Close-focus binoculars are recommended as well, but not required. To RSVP, please contact Marty Kastner at kastners@aol.com.

Dog policy

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conditions that lead to unpredictable behavior.

It is not unusual to find dog waste on the boardwalk, or bags of dog waste on the boardwalk left by owners who did not want to carry the bags along the entire route. Besides an aesthetics problem, pet waste can serve as a means of introducing pathogens and pests to park wildlife.

The decommissioned section of the Weston Lake Loop Trail actually makes it easier

to enforce policies prohibiting dogs on the boardwalk. In the past, park visitors with dogs on backcountry trails traveling clockwise could find themselves at the southwest corner of the boardwalk loop with no permissible alternative but to backtrack all the way to the hunt club clearing to reconnect with the Sims Trail.

Understandably, many people would take their chances and violate policy by continuing on the low boardwalk either north to the Visitor Center or east to Sims Trail. This should no longer be an issue,

since almost all dog traffic on the surface trails would have a surface trail alternative.

We believe a more balanced approach to decision-making should result in a restoration of a policy that restricts dogs, except service dogs, to surface trails at the park.

We do not feel limiting dogs to portions of the boardwalk will be effective, since those alternatives would be too difficult to enforce. Congaree National Park would remain one of the most dog-friendly national parks even with this change in policy.

Weather relents for annual meeting

The day of the annual meeting and oyster roast looked most unpromising this year, but the rain diminished just as guests were scheduled to arrive.

Though Belle Grove can readily accommodate an indoor meeting, it was a relief to carry out our full schedule of activities outdoors.

John Cely led members to the scenic bluffs of Mill Creek, with pinxterflower azalea in bloom. We also shared Mark Groover's study of the historic Thomas Howell archaeological site with its evidence of evolving occupation and Native American, African and European cultural traditions.

At our business meeting, we nominated continuing board members John Grego, Bill Stangler and John Cely for new three-year terms. Outgoing board members Barry Beasley and Valerie Marcil were acknowledged

for their service, and Glenda Swearingen and Bailey Slice Parker were nominated in their place and the entire slate was elected by acclamation.

Interpretive ranger Jon Manchester made remarks on behalf of superintendent Greg Hauburger, who was away on a week-long detail.

Among other events, Jon discussed recent staff departures at the park and acknowledged the many members of Friends who volunteer at the park.

John Sparrow with the Oyster Bar roasted oysters, while numerous Friends members contributed roast vegetables, soups and desserts.

We would like to thank our host Kevin Asbill for his work readying Belle Grove for our meeting.

And a special acknowledgement to the following volunteers who enthusiastically assisted



Jon Manchester, right, makes remarks while John Grego looks on.

with set-up, registration, food preparation, beverages, and clean up: Cathy Adan, Aaron Alessi, Mary Bull, Ray Davis, Stuart Greeter, Kate Hartley, Gerrit Jobsis, Gail Johnson, Michael Korash, Kathy Lewis, Bailey Parker, Clay Parker, Jill Polhemus, Neal Polhemus, Will Prioleau, Philoma Skipper, Bill Stangler, Alice Steinke, Ted Steinke, Glenda Swearingen, Butch Thompson, and Heather Torres.

Forest tent caterpillars are back

Forest tent caterpillars, a native species, periodically irrupt (or undergo an explosive growth in population).

During irruptions, visitors to the park will find tree trunks, boardwalk railings, and benches teeming with caterpillars. Trees are stripped of leaves, and a gentle rain of caterpillar frass (waste) falls upon unsuspecting visitors.

Forest Tent Caterpillars have continued their current

irruption for a third year, and this year's irruption appears even greater in magnitude than the previous two. Though trees have been stripped bare of their leaves this spring, they should leaf out again and rarely experience long-term damage.

The last irruption at Congaree National Park was 2000-2001.

Our Spring 2011 newsletter featured an account of an



Forest tent caterpillars

1842 outbreak that brought a railroad locomotive crossing the Congaree floodplain on a recently completed rail line to a slippery halt.



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*For a contribution of \$35 or more, you may choose one:

Baseball cap maroon _____ tan _____

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Bandana with map of Congaree National Park gold _____ blue _____ red _____

**For a contribution of \$100 or more you will receive a copy of "The Natural History of Congaree Swamp."

In addition, I would like to donate \$ _____ as a gift.

Thank you for supporting Friends of Congaree Swamp!

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