



Friends of Congaree Swamp News

Save the date

Christmas Bird Count

This year's Congaree Swamp Christmas Bird Count will be held **Sunday, Dec. 18.**

Christmas Bird Counts, conducted each year since 1900, are the oldest citizen-science project in the country.

A Christmas Bird Count (CBC) is an all-day effort to find and identify as many wild birds as possible within a 15-mile-diameter circle.

This effort, which now includes more than 2,400 circles and 72,000 participants annually, is sponsored by the National Audubon Society. Results may be reviewed at birds.audubon.org/christmas-bird-count.

The CBC for Congaree Swamp, founded by Robin Carter, includes almost all the national park and adjacent areas, from

See Save the date, page 6

INSIDE

President's Corner.....	2
Groundwater contamination.....	3
Kemira plant pollution	4
Water treatment plant limits	5
Fall migration count.....	7

Warm weather, mosquitoes punctuate annual meeting

Weather in the upper 80's? Clouds of mosquitoes? Then it must be late October in South Carolina and time for our annual meeting.

Actually, the mosquito hatch from Hurricane Matthew was much worse in the floodplain, though they did make their presence known at our meeting site near the Learning Center and outdoor classroom at Congaree National Park.

Our meeting started off with a presentation on the park's LEAF (Linking Ecology and Art of Floodplains) program by docent Caroline Eastman and program organizer David Shelley, the park's education specialist.

David also introduced two of the park's interns and program participants, Claudia Santiago and Monty Brantley, who discussed their experience in the program.

Afterwards, John Nelson and John Cely led hikes to discuss botany along the bluff edge, and longleaf pine ecology, respectively.

We started our business meeting shortly after the arrival of several park staffers and our guest of honor, Fran Rametta.



Fran Rametta, with wife Elizabeth, displays the Order of the Cypress.

Park Superintendent Tracy Stakely shared a welcome and then John Cely introduced Fran, this year's recipient of the Order of the Cypress.

Fran was a park ranger from 1980 until his retirement in 2009. John talked about Fran's early years when the park's only office space was downtown and Fran and Guy Taylor would commute to a facility-free park as the park's only staff.

John felt Fran had set a standard for hospitality and enthusiasm for the park that will never again be matched.

Fran then received his award, with an inscription

See Annual Meeting, page 7



President's Corner

Dr. John Grego

Bates Ferry Trail

In our Spring 2016 newsletter, we discussed hopes for a grant from REI that could include improvements to the Bates Ferry Trail. Our grant application was successful, and REI has contributed \$5000 to Friends to assist the park with trail improvements.

Initial plans for a loop along Bates Ferry Trail included improvements to the bridge over Bates Old River at the old ferry landing on the Congaree River. Unfortunately, when John Cely scouted possible routes for a loop trail, any reasonable route would include construction of a substantial new bridge to cross Indian Hill Gut. Further, the new portion of trail would not lie on the elevated causeway and hence would be much more susceptible to flooding. Though it would still be worthwhile to repair the first bridge, the park has turned to other alternatives.

In particular, the park has taken an interest in a trail system on its new acquisition, informally known as the Phillips Tract. The tract is readily reached from a paved access farther south down the U.S. 601 causeway from the Bates Ferry trailhead, and is just opposite the wayside for the Congaree Ferries historical marker. The grant could be used to improve the parking

area for a trail head and install trail kiosks.

A well-established system of jeep trails could be readily converted into a trail system. We largely support the concept, since it would open up yet another area of the park along the U.S. 601 causeway.

With the historical marker wayside, Bates Ferry Trail, a trail system on the Phillips tract, S.C. Department of Natural Resources' Bates Landing on the Congaree River and the unimproved boat landing on Bates Old River, there is a real opportunity to create a critical mass of recreational activities on the park's eastern end.

Honors College service course

I am excited to again be teaching an Honors College service course about natural history, cultural history and public engagement at the park. The course this year included guest lectures on a variety of topics, from water monitoring by Bill Stangler, the Congaree Riverkeeper, to an introduction to national parks by Dr. John Kupfer, USC Geography chair, and a discussion of "Tales of Congaree" by my wife, Dr. Rhonda Grego.

The focus of the course is on service activities and a terminal service project, and these have resulted in some wonderful contributions over the years. Students are often attracted to the course for the natural history topics, but the heart of the course for me are the tools I share with students to be active and better-informed citizens.

We spend time studying various environmental issues in the Midlands, in the context of which regulations are relevant, which agencies have regulatory authority, and why and how the public can participate in the process. Along the way, students learn about on-line sources for environmental compliance data, how to make Freedom of Information Act requests, how to stay informed about permitting processes, and other research tools and databases. They rarely have an immediate use for these tools, but hopefully the lessons will linger until a time when the students have an opportunity to use them.

Friends of Congaree Swamp News is published quarterly by Friends of Congaree Swamp, P.O. Box 7746. Columbia, SC 29202-7746. It is distributed free by mail to Friends members and other interested parties.

All content is copyrighted and may not be reproduced except by express permission of Friends of Congaree Swamp.

Subscription requests or changes of address may be sent to the above address or emailed to friendsofcongaresswamp@gmail.com. Please visit our Web site at www.friendsofcongaresswamp.org.

Friends of Congaree Swamp advocates for Congaree National Park and its unique environment.

Dr. John Grego, President

Sharon H. Kelly, Editor

Westinghouse Nuclear Fuels Plant

Groundwater contamination a concern

The Westinghouse Nuclear Fuels Plant on Bluff Road has been in the news lately for a build-up of uranium compounds in its scrubbers.

In addition, Friends of Congaree Swamp has been aware of groundwater contamination on the site and coincidentally reviewed company records last fall to learn more about the source and extent of these problems.

The Westinghouse property includes Upper and Lower Sunset Lakes, formed by dams on a natural oxbow of Mill Creek, which winds across the floodplain through Richland County's Mill Creek mitigation site before emptying into the Congaree River less than a mile north of Congaree National Park. Groundwater contamination has the potential to affect Mill Creek, and hence the Congaree River and the park.

Groundwater contamination has been studied at the site since 1980. Starting in 1988, Westinghouse remediated chlorinated volatile organic compounds using air sparging and soil vapor extraction, techniques that allow the compounds to evaporate as they are exposed to air.

Over the intervening years, Westinghouse made repeated requests to the S.C. Department of Health and Environmental Control to suspend this more aggressive treatment



Westinghouse Nuclear Fuels Plant

system and instead argue for groundwater breakdown of the volatile organic compounds—a groundwater mixing zone.

After completion of a source investigation report in 2011, DHEC finally allowed Westinghouse to suspend its air sparging system. Trends in volatile organic compound pollution during the intervening two years were mixed, and DHEC ordered a remedial investigation report, which included a useful history of volatile organic compound pollution and other types of contamination on site.

The 2013 study identified lagoons that are part of the Westinghouse wastewater treatment system as major sources of groundwater pollution. The most consistent contaminants linked to the wastewater treatment lagoons have been fluoride and nitrate, though gross alpha and gross

beta particles have been detected downgradient as well.

The presence of alpha and beta particles, possibly occurring from radioactive decay of naturally-occurring radionuclides, has been the topic of much debate. Studies established that only alpha particles have exceeded naturally occurring levels, though exceedances are “spotty,” both temporally and spatially.

The chlorinated volatile organic compounds contamination was traced to the plant's former oil house, likely caused by improper storage of solvents. A drainage ditch onsite has contributed to the migration of volatile organic compounds from groundwater to surface waters, including a man-made pond near Sunset Lake and Sunset Lake itself. Though

See Westinghouse, page 7

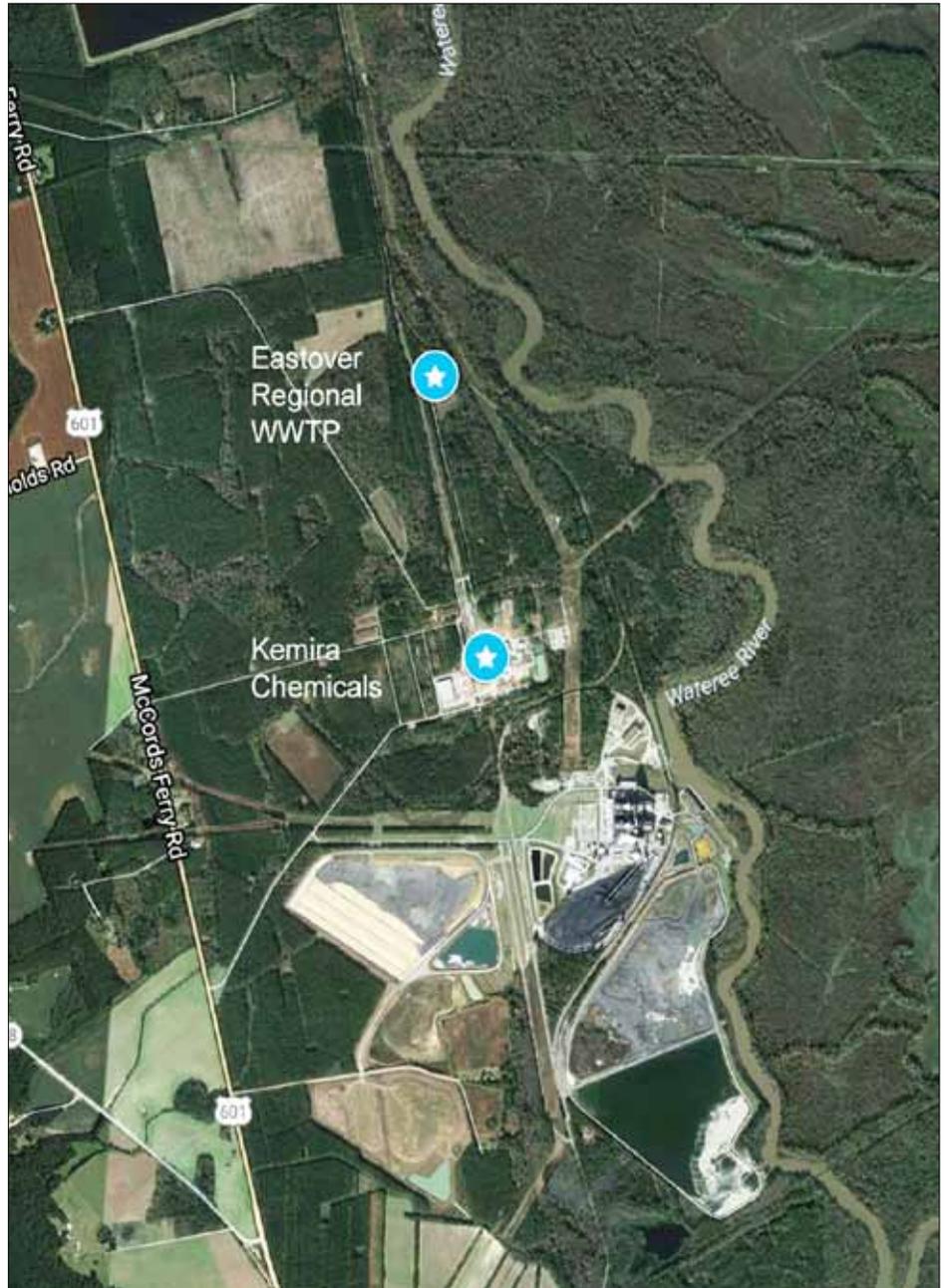
Wateree River

Kemira pollution discharge within limits

We recently had the opportunity to review the pollution permit for Kemira Chemicals, which is located on the old FinnChem site. Richland County bought the land in 1998 to attract FinnChem and still owns the land today. Kemira produces sodium chlorate, which is used to generate chlorine dioxide, a bleaching agent for wood pulp.

After we reviewed the NPDES (National Pollution Discharge Elimination System) permit in 2012, we had requested that mercury monitoring should move beyond simply monitoring and reporting and instead set specific standards. We were gratified to see that the new permit includes discharge limitations for daily maxima and monthly averages for mercury, particularly since the Wateree River is impaired for mercury, based on analysis of fish tissues.

We were also pleased to see that monitoring requirements for other analytes are being maintained. Looking at the three-year compliance history, several analytes (e.g., chromium, total suspended solids, biochemical oxygen demand) had daily maxima that fell between the discharge limitation for monthly average and daily maxima, so it is clear that these analytes should continue to be monitored using the existing standards.



In 2012, we noted that mercury levels of 115 ng/l (nanograms/liter) had been measured in the discharge. In the interim, values as high as 119 ng/l and 131 ng/l have been observed. We support the imposition of the proposed standards—a daily maximum

of 105 ng/l and monthly average of 50 ng/l. Such levels would be a first step to limit effects on sensitive aquatic species in the Wateree River.

The endangered species documentation claimed that shortnose sturgeon (*Acipenser*

See *Kemira*, page 5

Water treatment plant limits imposed

The S.C. Department of Health and Environmental Control recently issued a public notice for the Richland County/Eastover Regional Wastewater Treatment Plant's discharge to the Wateree River, which is less than ten miles upstream from Congaree National Park.

The plant's current discharge is modest. It is permitted to release 250,000 gallons per day and usually discharges much less, but upon completion of the Lower Richland sewerage line, its capacity could increase to more than one million gallons per day. Friends of Congaree Swamp prepared comments on the public notice.

The permit had some good news. We were pleased to see critical analytes, including total ammonia nitrogen, now have effluent limits imposed rather than simply being monitored and reported. Limits for other analytes were reasonable, though we did share a history of bacteria water quality and

pH violations that extended beyond incidents reported in the permit rationale.

The permit rationale for discharge permits often has woefully incomplete documentation of rare, threatened and endangered species, and this permit was no exception.

It stated that the discharge would not affect endangered species, though this is inconsistent with the scientific record. Shortnose sturgeon from Lake Marion are known to spend a substantial portion of the year in the vicinity of the confluence of the Wateree and Congaree Rivers.

In addition, mussel surveys as recent as this past summer have identified species of interest, including Savannah lilliput, yellow lampmussel, rayed pink fatmucket (you can't make these names up) and tidewater fatmucket downstream of the permit site. The former is a candidate

for federal listing under the Endangered Species Act.

We were particularly concerned that total mercury is measured only once per year. This is critical since readings for mercury from the plant's discharge have been observed close to recommended control limits, and the Wateree River is impaired for mercury at more than one location.

We argued that mercury should instead be sampled on a monthly basis to better protect sensitive aquatic species in the Wateree River.

In its reply to our permit comments, DHEC indicated that a mercury minimization plan had been added to the permit, which requires the applicant to submit a plan within nine months of the permit's issuance to identify all possible sources of mercury and reduce or eliminate them.

A small step in the right direction, though not as large a step as we sought.

Kemira

continued from page 4

brevorostrum) is found only in the Congaree River. It would be more accurate to say shortnose sturgeon from Lake Marion were found to spend a substantial portion of the year in the vicinity of the confluence of the Wateree and Congaree

ivers. We also documented freshwater mussel species in the river (see the story on Richland/Eastover Regional Wastewater Treatment Plant for details).

Clearly, this area of the Wateree River harbors significant populations of important indicator species, and deserves a high level of vigilance and protection on the part of

the S.C. Department of Health and Environmental Control.

Given the danger of bioaccumulation of heavy metals discharged from this facility, we strongly recommended that DHEC move toward even stricter standards on heavy metals, including mercury and chromium, in future permit reviews.

Save the date

continued from page 1

Gadsden in Richland County to Fort Motte and St. Matthews in Calhoun County.

The Congaree Swamp CBC often has among the highest counts in the country of Pileated Woodpecker, Northern Flicker, Yellow-bellied Sapsucker, Barred Owl, Winter Wren, Hermit Thrush, and blackbird species, among others. Last year, participants saw a Golden Eagle soaring over park property, and the year before participants who were out before dawn witnessed a spectacular display from the Geminid meteor shower—you never know what you will see out there.

Join us to help out. If you are a novice, an expert birder will lead you around the boardwalk and Bluff Trail in the morning, which together host some of the park's best sites of interesting wintering species and permanent residents, including Winter Wren, Blue-headed Vireo, Brown Creeper, Red-headed Woodpecker, Rusty Blackbird and Fox Sparrow.

Many participants stay for a few hours, but some will bird all day as part of one of our parties. Meet at the visitor center parking lot at 7 a.m. for this free event. If interested, please contact John Grego at 803-331-3366, or email friendsofcongareeswamp@gmail.com.

Big tree hike

On **Saturday, Jan. 14, 2017**, we will explore an accessible sector of the park to look for big trees.

In 2013, Frank Henning, the park's learning center director, approached University of South Carolina geography Prof. John Kupfer about updating the park's big tree database. The park

was divided into more than 50 sectors and volunteers agreed to search the sectors to confirm the status of trees known from the database as well as identify any new candidate trees.

We will visit a sector to the east of the Weston Lake Loop Trail to discuss the project and share some of our discoveries, including a newly documented Loblolly Pine, some unusual cypress and tupelo and other serendipitous



Loblolly Pine

discoveries that arise when visiting the same area repeatedly and intensively. En route, we will stop by the Richland County pine, a pocket of old growth just off the elevated boardwalk, and the national champion Loblolly Pine.

Meet at the Harry Hampton Visitor Center at 9 a.m. The hike will last until 2 p.m., so bring lunch and something to drink. Participants should be in good physical condition with sturdy foot wear. Total walking distance will be about five miles, about half of which will be on maintained trails. The hike will be limited to 30 people.

Contact John Grego at 803-331-3366 or friendsofcongareeswamp@gmail.com to sign up. Preference will be given to members of Friends of Congaree Swamp.

Fall migration count

Ron Ahle captured the pictures at right during the Fall North American Migration Count held Sept. 25 at Congaree National Park.

The highlight of the day occurred before dawn with more than 600 migrating thrush heard from the Visitor Center parking lot.

The nocturnal flight call count was dominated by Swainson's Thrush.



Hooded Warbler



American Redstart

Westinghouse

continued from page 3

the source of the contamination was remediated years ago, groundwater trends in volatile organic compounds even today are either declining or stable.

Fluoride has been the most persistent pollutant onsite, with the contaminant plume reaching Sunset Lake to the extent that some surface water contamination has been detected as well, though not as far downstream as the spillway for Sunset Lake.

Though fluoride appears to originate in the vicinity of the wastewater lagoons, it is not clear that the lagoons are the source. Nitrate groundwater contamination from the lagoons extends south toward a manmade pond near Sunset Lake, but has not been detected at the lake itself.

These problems have been the subject of dozens of studies over the years and merit more public attention than they typically receive, especially in light of recent events suggesting problems with the safety culture of the plant.



Occasionally, there's a snake in the grass. This banded water snake was caught minding his own business.

Annual meeting

continued from page 1

that noted his "abiding love for the Congaree Swamp." We ended the business meeting by re-electing board members Barry Beasley, John Cely, John Grego, and Bill Stangler and electing Blaney Coskrey.

Afterwards, we settled down to roast oysters from the Oyster Bar, board member Andy Fiffick's grilled chicken, and chili, roast vegetables and desserts prepared by volunteers, and some excellent local beers.

A special thanks to our volunteers: LaBruce Alexander, Mary Balbach, Kay McCord, Warren Steckle, and Alice Steinke (roast vegetables), Mary Bull (registration, set up and clean up), Ellen Blundy, Emily Grego, Rhonda Grego and Mitch West (set up and clean up), Blaney Coskrey (beverages), Andy Fiffick (barbeque), and Carol Gist, Kate Hartley, Miriam Oudejans, Dennis Poole, and Jean Prothro (washing dishes, utensils and napkins).



PRST STD
U.S. Postage
PAID
Permit #1365
Columbia, SC

Post Office Box 7746
Columbia, SC 29202-7746
www.friendsofcongarree.org

Join Friends of Congaree Swamp today!

Yes, I want to support conservation of Congaree Swamp for future generations. Enclosed is my tax-deductible contribution of \$ _____. (Please make checks payable to Friends of Congaree Swamp.)

Individual \$15 Name(s) _____
 Family \$35 * Mailing address _____
 Advocate \$50 City _____ State _____ Zip _____
 Partner \$100 ** Phone _____ Email _____
 Benefactor \$500
 Patron \$1000
 Nonprofit \$50
 Corporate \$1000

Please keep your information current to receive special notices about field trips, events, scheduling changes and acknowledgements in addition to a quarterly newsletter.

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

- Baseball cap maroon _____ tan _____
- Tan visor _____
- 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!

Friends of Congaree Swamp, P.O. Box 7746, Columbia, SC 29202-7746
FOCS is a nonprofit 501(c)3 organization, EIN 56-2057087