



SIERRA CLUB
GEORGIA CHAPTER

Savannah River Group

Greetings from your friends at the Savannah River Group! Our May-June newsletter includes information about upcoming meetings and events, including one outing, our stream monitoring program and more. We hope to see you at one of our gatherings soon!

Upcoming Monthly Meetings

The Savannah River Group is glad to offer our members and supporters the option to attend our hybrid meetings either in person or virtually via Zoom. Virtual attendees are encouraged to use the Zoom links below to help us plan our meetings. For those attending in-person, we meet at the Unitarian Universalist Church at 3501 Walton Way Extension, Augusta.

Tuesday, May 21, 6:30 PM: Join us for an exclusive presentation on the untamed beauty of the Falkland Islands, South Georgia Island, and the Antarctic Peninsula. Experience the magic of the Antarctic region through Herb Fechter's lens as he used the cutting-edge Nikon Z9 camera to capture the mesmerizing wildlife in January. Don't miss this chance to witness the awe-inspiring landscapes and the captivating creatures of the Southern Ocean. Join us for an evening of stunning photography and captivating storytelling!

For those attending virtually, you can use the following Zoom information:

Join Zoom Meeting

<https://us06web.zoom.us/j/87206984512>

Meeting ID: 872 0698 4512

Phone: 646-558-8656

or find your local number: <https://us06web.zoom.us/u/kb5Rhnc0Mb>

Tuesday, June 18, 6:30 PM: Our guest speaker at our June meeting will be Joel Cantrell from the Savannah River Mission Completion (SRMC). He is the Director of Environment, Safety, Health, and Quality for Savannah River Mission Completion. Joel will talk about the SRMC, a contractor with Savannah River Site, and its work to dispose and/or store liquid radioactive waste, remediate and treat contaminated surface water, groundwater, and soils. He will discuss the SRMC mission to stabilize,

process and/or remove cold war legacy high level nuclear waste. This evening will surely be educational and informative!

For those attending virtually, you can use the following Zoom information:

Join Zoom Meeting

<https://us06web.zoom.us/j/87206984512>

Meeting ID: 872 0698 4512

Phone: 646-558-8656

or find your local number: <https://us06web.zoom.us/u/kb5RhncoMb>

The Savannah River Group holds six Executive Committee (ExCom) meetings each year, always on the fourth Monday of the month. ExCom meetings for 2024 are scheduled for February 26, April 22, June 24, August 26, October 28, and December 30, all starting at 6:30 PM. Any Sierra Club members are welcome to join. For more information, contact Cathy Black at sonnyandcathyblack@gmail.com.

Upcoming Outings & Events

Kalmia Trail at Hitchcock Woods - Friday, May 10, 9 AM: *(4 miles, 2 mph, moderate)* Stop and smell the Kalmia, which is another name for Mountain Laurel! Join Cheryl Murga as she leads you through Hitchcock Woods to the Kalmia Trail. Enjoy the wooded scenery and nature sounds as we hike to the trail. Meander through the Kalmia, taking in the beauty and scent of the blooms. They are a sight to see as they stretch into the valleys and fields surrounding the trail. Kalmia generally pop out around Mother's Day and there can be a lot of foot/horse traffic for viewing weekends. As such, the hike has been scheduled for Friday, May 10, with a meet time of 9 AM at 1700 Dibble Road, Aiken. Typically, the area has sandy trails with occasional mud and horse presence. Bug spray can aid in a more pleasant outdoor experience as it is both mosquito and tick season. Trail Head Location: Hitchcock Woods, Rabbit Valley/near Railroad Crossing, (1700 Dibble Rd Aiken, SC).

Coming from Augusta, make right off Jefferson Davis Highway onto Hitchcock Parkway, left onto Dibble Road, pass the horse trailer parking, trail head entrance will be on the right. If you hit the railroad crossing, you've gone too far. Learn more and RSVP at the link:

<https://act.sierraclub.org/events/details?formcampaignid=7013q000002K1M6AAK>

Georgia Chapter and National Sierra Club News

The National Sierra Club has restructured its various interests into campaigns. What was "Our Wild America" is now the "Conservation and Outdoors Campaign." It is focused on protecting nature by passing both federal and state level policies, local conservation, and opposing activities that would degrade natural lands. The Campaign is divided into five parts, each with its own manager: Forests, Water, Lands, Oil and Gas, and Wildlife. This is just one example of the type of restructuring happening at the National organization. While the changes will certainly have an impact, it's not expected to significantly affect our work at the Chapter level.

Jeffrey Holder

SRG Delegate to the Georgia Chapter ExCom

Transportation Update

Lower Savannah Council of Governments is offering a review of the draft proposals for public transportation improvements to Aiken County's Best Friend Express transit system. The Transit Improvement Study (TIS) has been well underway, and the SRF Consulting Group has prepared a presentation and written materials to share with our community agencies, businesses, and civic leaders.

There are two meetings scheduled:

- Tuesday, April 30 - 10 AM
 - Lessie B. Price Center (841 Edgefield Avenue, Aiken, SC)
- Wednesday, May 1 - 10 AM
 - North Augusta Community Center (495 Brookside Avenue, North Augusta, SC)

Join either of the following events to ask questions and offer your feedback! Questions? Contact either William Molnar, Executive Director of Lower Savannah Council of Governments, at wmolnar@lscog.org or to Christine Chandler, Transit Manager, at cchandler@lscog.org.

The Savannah River Group's Transportation Committee's next meeting is scheduled for Saturday, May 18, at 1 PM. We'll be meeting at the Savannah Riverkeeper's Office (328 Riverfront Drive, Augusta).

Come help us build a walkable, bikeable community with access to robust public transportation.

Chris Hall

Transportation Chair, Savannah River Group

Conservation Update

Legislative News

This month I am going to emphasize where good bills go to die. In the recently concluded session of the Georgia Legislature, there were two very good bills that never saw the light of day: HB 71 (The Okefenokee Protection Act) and HB 251 (The Clean Energy Act).

The Okefenokee Protection Act would have prevented the opening of future mining next to the Okefenokee Swamp. The legislature could not do anything to stop the current mining proposal because the permits had already been applied for. But it would have prevented the continuation of mining on Trail Ridge, which forms the eastern hydrological boundary of the swamp and is apparently a rich source of titanium dioxide, a coveted white pigment.

The Clean Energy Act would have required the gradual reduction of CO2 emissions from energy generation facilities so that those emissions would have been eliminated by 2050.

Both of these bills would have yielded positive environmental benefits.

HB 71 was assigned to the House Environment and Natural Resources Committee where the committee chair, Rep. Lynn Smith (R-Newnan), sat on the bill the entire session, never even bringing it up in the committee. Committee chairs have that power unless some member of the House is willing to do the hard work of bypassing the committee, a process that will irritate a number of powerful people.

HB 251 had the misfortune that all five sponsors were Democrats. In a Republican-dominated legislature, that is terminal. It did not get out of committee either. It does not matter how good the legislation might be for the state, if there are no Republican sponsors, it will not become law.

What else does stream monitoring measure?

In the last issue of this newsletter, I described the data generated by our Adopt-A-Stream (AAS) volunteers on E. coli in our streams. E. coli data isn't the only information that our AAS volunteers generate. We also measure pH, dissolved oxygen, temperature, conductivity, phosphate, turbidity, and color.

pH is a measure of the alkalinity (higher pHs >7.0) or acidity (lower pHs <7.0) of the sample. Neutral pHs (6-8) are most conducive to life, but there are organisms that can survive in extreme pH conditions (>9.0 or <5.0). Indeed, there are some South Georgia streams that have normal pHs around 3.5, and they have aquatic biota populations that are different from North Georgia streams but normal for them. Since there is not a lot of buffering capacity in freshwater streams to stabilize the pH, the pH can vary significantly with relatively minor disturbances like rain events or droughts. But those natural changes are generally limited to no more than one pH unit from the norm for that stream. It generally takes human intervention to create changes in pH greater than one unit. For example, early in our monitoring activities, we encountered a pH in Rae's Creek just above the Augusta National Golf Club that was 10.0 in a stream that has a normal pH just under 7.0. Our investigation quickly discovered a freshly poured concrete culvert in the creek about half a mile upstream. A call to the Augusta Utilities Department confirmed the culvert construction, and we relayed our data to the Utilities Department. I have not seen a similar problem since that time.

Dissolved oxygen in our area is the most critical parameter to the survival of aquatic species. For those organisms that obtain their oxygen from the water, the dissolved oxygen is a limiting resource. Unlike air breathing organisms like us who have a medium that is generally about 21% oxygen to keep us supplied with the oxygen that we require, aquatic organisms live in a medium that can supply a maximum of 15mg/L of oxygen (about 0.0015%). And the solubility of oxygen in water decreases with increases in temperature. So, at ambient temperatures, the availability of oxygen to aquatic organisms is always less than 0.0015%. And, it should be noted that the metabolism of aquatic species is very similar to our own metabolism requiring about the same quantity of oxygen that we require.

Water temperature is also an important factor to aquatic life. Most aquatic animal species are cold blooded, meaning that they adopt the temperature of the medium they live in. So, as the temperature of the water warms, the availability of oxygen decreases, and, at the same time, their metabolism increases creating a double bind for them in warming waters. Water temperature is affected most by air temperature, which follows a circadian rhythm warming as the sun rises and cooling as the sun sets. Water temperatures in our small streams follow the air temperatures as they rise and fall. The smaller the stream, the closer its temperature to the air temperature unless its temperature is compromised by an upstream impoundment.

Conductivity is a measure of the ions dissolved in the water to conduct an electric current. Note that pure water is not a good conductor of electricity. It is the ions dissolved in the water that are responsible for conducting the electricity. So, measuring conductivity is an indirect way to determine the concentration of ions in the water as well as a means of estimating the pollution in that sample of water. Over time, a stream will exhibit a characteristic conductivity depending on its sources. Comparing a present sample's conductivity to the average over time can give you an idea whether the stream is more polluted than usual. A follow-up is necessary to determine the cause. We have encountered high conductivities in our streams occasionally, but they have disappeared pretty quickly.

Measuring phosphate concentration is an attempt to determine if fertilizer misapplication may be a problem in the watershed. Phosphate is a component of almost all fertilizers because it is often a limiting factor in the growth of plants. Besides, phosphate is easier to measure than nitrate or potassium, the other common components of almost all fertilizers. Surprisingly, our results indicate that the levels of phosphate in Rae's Creek behind Rae's Coastal Café are generally very low after the creek runs through the green yards of the neighborhoods of west Augusta, but are significantly higher in Rocky Creek after running through the industries of south Augusta. This observation indicates that either the homeowners are more careful than I thought with their fertilizer applications, or maybe the homeowners are like me and leave the grass clippings on their lawns to fertilize future growth making additional fertilization unnecessary. But unfortunately, we have seen grass clippings dumped directly into the streams.

While turbidity can be measured on a standard scale, we simply observe whether the water is clear, slightly turbid, strongly turbid, or opaque. Since we generally do not monitor in the rain (there have been exceptions), we generally do not observe much turbidity, which is most often caused by rain events eroding stream banks or bare soil of construction sites that are not adequately protected for erosion and sedimentation. In addition to erosion and sedimentation, turbidity can be caused by overgrowth of algae or bacteria fed by pollution in the stream. These are most often seen in impoundments. Active algal blooms are green and usually cover the surface of the impoundment while dead algal blooms sink and provide nutrients for bacteria to grow and can cause the water to turn brown. Brown water can also be caused by erosion depending on the color of the suspended particles.

Note that our data can be found on the AAS website: Go to adoptastream.georgia.gov, then click on Data Views, and then click on either Columbia or Richmond County and pull up the data you want. When the county choice comes up, you can also decide how many years of data you want to view. There is a lot of data there.

Frank Carl, Conservation Chair & Adopt-A-Stream Richmond County Program Coordinator, Savannah River Group

Meet the Savannah River Group

Get involved with your local Savannah River Group! Plug in to one of our issue committees by contacting the leaders below. Not sure where to start? Reach out to our co-chairs and let them know what you're interested in!

Your new 2024 Executive Committee for the Savannah River Group is:

- Co-Chair: [Cathy Black](#)
- Co-Chair: [Greg Sutherland](#)
- Secretary: [Bridget Brown](#)
- Treasurer – [Moirra Nonnweiler](#)
- Georgia Chapter ExCom Delegate: [Jeffrey Holder](#)
- At-Large Member: [Ann Brown](#)
- At-Large Member: [Chris Hall](#)

The Savannah River Group's leaders also include:

- Conservation Chair: [Frank Carl](#)
- Fundraising Chair: Vacant
- Membership Chair: [Bill Jackson](#)
- Newsletter Editor: [Sam Booher](#)
- Outreach Coordinator: [Linda McBurney](#)
- Outings Chair: [Cathy Black](#)
- Political Chair: [Tim Nelken](#)
- Transportation Chair: [Chris Hall](#)
- Web Master: [Charlotte Gardner](#)
- Adopt-a-Stream Program Coordinators
 - Richmond County: [Frank Carl](#)
 - Columbia County: [Tim Nelken](#)

Thanks for all you do to help protect the environment in the Augusta area, across Georgia, and beyond. Hope to see you at one of our upcoming meetings or events!

P.S. - If you ever need to contact the Savannah River Group by "snail mail," you can reach us at this address: Savannah River Group, Sierra Club, PO Box 14463, Augusta, GA 30919.