



RESEARCH

Highlighting ongoing research efforts

EDUCATION

Showcasing student achievements

OUTREACH

Reviewing events fostering education

ACHIEVEMENTS

Celebrating new milestones

FINANCIAL

Providing insight into funding and support



Photo of a wild pig farrowing nest constructed of palmettos within a pine forest. (Photo courtesy of Jim Beasley)

RESEARCH

Looking Closer: How Wild Pigs Choose Farrowing Sites

By: *Tyjaha Steele*

For many animals, where offspring are born can influence their survival from the very first few moments of life. Shelter, nearby resources, and protection from disturbance all play a role in reproductive success. For invasive wild pigs, understanding where females choose to give birth, known as farrowing sites, can provide insight into their reproductive behavior and help inform more effective management strategies.

[Read more here.](#)



Former doctoral student Sarah Chinn taking measurements on a piglet captured at a farrowing nest (Photo courtesy of Jim Beasley)



Pictured above is a photograph of New Ellenton Bay. (Photo courtesy of Amanda Hurst).

How Hydroperiod and Tree Cover Influence Mercury Cycling in Carolina Bay Wetlands

By: Tyjaha Steele

In wetlands, small changes in water levels and vegetation can have a significant impact on how elements move through the environment. Carolina bays are shallow, isolated, oval-shaped wetlands found throughout the southeastern United States that naturally fill and dry over time. Mercury, a naturally occurring element introduced through both natural processes and human activities, may remain stored in wetland sediments or be transformed into methylmercury, a form that more readily accumulates in plants and animals and moves through food webs. These pathways are shaped by local conditions, which vary widely among isolated wetlands in their water levels and vegetation structure.

To better understand how these factors influence mercury cycling, researchers from the University of Georgia's Savannah River Ecology Laboratory (SREL) examined mercury dynamics in Carolina Bay wetlands at the Savannah River Site (SRS) in South Carolina. Led by Xiaoyu Xu, an associate research scientist at SREL, the study focused on ten Carolina Bay wetlands that differ in hydroperiod, the length of time water remains in a wetland each year. Some bays dry out seasonally (short-hydroperiod bays), while others remain flooded for extended periods (long-hydroperiod bays).

“In Carolina bay wetlands, mercury behavior is largely dictated by how long a wetland stays underwater, a cycle known as its hydroperiod. Short-hydroperiod wetlands, which are only seasonally flooded, typically act as mercury ‘sponges’ because their dense tree canopies capture mercury from the atmosphere and drop it into the soil via falling leaves,” explains Xu. “However, long-hydroperiod wetlands, those that stay flooded for most of the year, create the perfect environment for bacteria to transform inorganic mercury into methylmercury.”

Researchers collected surface sediment samples from each wetland during both wet and dry seasons and measured concentrations of total mercury and methylmercury. Sampling across seasons and wetland types allowed the research team to compare the amount of mercury accumulated in sediments and its rate of conversion into its more toxic form under changing environmental conditions.

The study suggests that wetlands with shorter hydroperiods, those that dry out part of the year, accumulated higher levels of total mercury, particularly when flooded. This pattern was associated with greater tree canopy cover, which can influence how mercury enters wetland sediments through natural processes such as leaf uptake and litterfall.

[Read more here.](#)

EDUCATION



Graduate Student Highlight: Meet Kiersten Nelson

By: Tyjaha Steele

Kiersten Nelson from Zionsville, Indiana, recently completed her doctoral degree at the University of Georgia's Savannah River Ecology Laboratory (SREL), where she worked as a Ph.D. candidate in Dr. Stacey Lance's Lab. Nelson recently defended her dissertation, "Improving Amphibian Conservation Translocation Strategies and Outcomes: A Case Study of Gopher Frogs (*Rana [Lithobates] capito*)," and officially graduated in May 2026. She joined the lab after learning about a graduate student position focused on gopher frog conservation and was drawn to the opportunity to contribute to collaborative, applied research involving academic, governmental, and nonprofit partners. The chance to conduct research that could directly support wildlife management and conservation efforts made SREL the right fit for her interests and career goals.



Kiersten Nelson is seen releasing a headstarted gopher frog metamorph. (Photo courtesy of Amanda Hurst)



Seen is a newly metamorphosed gopher frog that was released on the Savannah River Site. (Photo courtesy of Kiersten Nelson)

Q: Why did you choose to study at SREL/UGA?

A: I chose SREL/UGA mainly because I was interested in working with Dr. Stacey Lance. Additionally, I had heard about SREL from other professors in my undergrad, and it seemed like a great place to conduct my graduate research. When I visited SREL for the first time, I was immediately intrigued by all of the research possibilities both at the lab and across the SRS. I really enjoy that the ecology lab is its own research campus, and I can conduct mesocosm experiments right outside of the lab while also having the opportunity to study the natural environment across the SRS.

Q: What does your current research focus on, and what drew you to this field?

A: My research generally focuses on improving conservation strategies for the at-risk gopher frog (*Rana [Lithobates] capito*). The gopher frog has experienced widespread declines throughout their range and is currently being considered for federal listing under the Endangered Species Act. In South Carolina, there are only two remaining metapopulations one on the Francis Marion National Forest and one on the SRS, where my work takes place. We use a conservation strategy called headstarted to supplement these declining populations throughout the species range. My research is focused on improving headstarting

methods and enhancing our understanding of juvenile movement and behavior to inform habitat management recommendations. b) Some of my past research experiences have focused on amphibian disease ecology, but I often felt there was a disconnect between the research being conducted and its translation into conservation actions. Thus, going into graduate school, I wanted to conduct applied research that directly informs management strategies.

Q: What do you enjoy most about working at the lab, and how has it challenged or inspired you?

A: I enjoy the diverse range of research that is being conducted at SREL. The lab has students from several different departments on campus, and it's been interesting to learn about everyone's different research over the years. This experience has both challenged and inspired me to effectively communicate my research to peers outside my field while also broadening my perspective through being exposed to such a wide breadth of research that is being conducted at SREL.

Q: What skills or lessons have you learned during your time at SREL?

A: I have learned countless skills and lessons during my time at SREL. I am incredibly grateful for the opportunities that I had at SREL and the people I have met and gotten to work throughout



A newly metamorphosed headstarted gopher frog fitted with a transmitter is seen being released into an artificial burrow. (Photo courtesy of Kiersten Nelson)

my time here. One of the biggest things I've learned is how to manage multiple research projects and effectively collaborate and communicate with colleagues on large research projects.

Q: What challenges have you faced in your research, and how did you overcome them?

A: There have been several challenges throughout my graduate degree. One of the main challenges has to do with simply the unknown and having to make quick decisions based on only the knowledge you have in that moment. This can happen a lot with fieldwork, where unexpected situations arise, and you have to make the best decision you can without fully knowing what the outcome is going to be. I also learned that, because of this, it's really important to try to think ahead of time of any possible situations that may arise and try to be prepared for anything.

Q: What are your career aspirations after graduation, and how has your time at SREL/UGA shaped your future goals?

A: My career aspirations generally are to conduct applied research that informs management actions and tackle complex conservation problems with innovative solutions. After graduation, I am going to be sticking around for a bit and doing a postdoc with Dr. Lance, focused

on animal movement and habitat management. Throughout my time at SREL, I have learned the importance of habitat quality and preserving or restoring habitats that support long-term population persistence to maintain biodiversity and ecosystem function. I am really excited about the opportunity to learn more about animal movement and behavior to inform future habitat management recommendations and practices.

Q: If you could share one key takeaway about your work, what would it be?

A: My overall key takeaway from my work is the important role that researchers play in conservation and the value of collaboration in achieving conservation goals. For gopher frog conservation efforts, my work highlights the importance of the terrestrial environment and access to essential refugia to support long-term population persistence of the species throughout their range. For headstarting efforts, I have shown that artificial burrows can provide immediate access to refugia for released frogs and would urge personnel to release headstarted frogs into refugia rather than at the wetland edge. For gopher frog headstarting efforts, I think it is important to use this unique opportunity to learn while conducting conservation actions in order to inform future management decisions and enhance our understanding of amphibian ecology along the way.

OUTREACH

Community Connections Through Ecology and Education

By: Tyjaha Steele

Throughout every season, the Savannah River Ecology Laboratory's (SREL) Outreach Team remains active in connecting the community with the natural world through educational talks, interactive animal encounters, and guided outdoor experiences. During a recent visit with the Midland Master Naturalists, the team shared an inside look at the work conducted at the lab before leading an engaging Eco Talk focused on the region's native wildlife.

Participants had the opportunity to meet live animal ambassadors and learn more about the ecology, behavior, and environmental importance of reptiles, amphibians, and other native species found throughout the Southeast. Following the presentation, guests explored the property on a guided walk, gaining a firsthand look at the habitats and ecosystems that support the lab's research efforts.



Individuals from the Midland Master Naturalists group smile at the end of their visit. (Photo courtesy of Tyjaha Steele)



Dee Hucks writes down observations about the animals being observed. (Photo courtesy of Tyjaha Steele)



Amanda Hurst displays the color variation in male eastern fence lizards. (Photo courtesy of Tyjaha Steele)



Individuals are seen observing macroinvertebrates from Upper Three Runs Creek. (Photo courtesy of Tyjaha Steele)

ACHIEVEMENTS



Dr. Olin E. "Gene" Rhodes Jr.

Congratulations to Dr. Olin E. "Gene" Rhodes Jr., director of the University of Georgia Savannah River Ecology Laboratory and UGA Athletic Association Professor of Applied Ecology in the Odum School of Ecology, on being named a 2025–2026 University Professor and recipient of the 2025 Fred C. Davison Distinguished Scientist Award. These honors recognize his decades of scientific excellence, leadership, and contributions to wildlife ecology and genetics, the application of molecular tools in conservation, species reintroduction strategies, wildlife diseases, and human-wildlife conflict.

As a nationally recognized scientist, Dr. Rhodes has authored more than 250 scientific publications and helped advance the application of molecular tools in conservation and wildlife management. Since becoming director of SREL in 2012, he has led significant growth in the laboratory's research enterprise, graduate education, outreach efforts, and facility modernization while continuing to mentor students and researchers across disciplines.

FINANCIALS

Every month, SREL faculty, researchers, and staff are hard at work applying for a variety of funds to support new and continuing projects. Below are a few of the funding allocations that have been awarded to SREL researchers since January 2026.

- **\$82,350** to the Beasley Lab from Fish & Wildlife FDN
- **\$38,312** to the Tuberville Lab from the University of California
- **\$199,203** to the Lin Lab from Savannah River Mission Completion

SUPPORT SREL



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**Savannah River
Ecology Laboratory**

Did you know that your donation supports a variety of different projects at SREL? Your donations assists graduate students conducting research at the lab, the outreach team who works hard to bring hands-on wildlife presentations to the Central Savannah River Area, and everything else in between. We ask you to consider supporting SREL today by using this [link](#).