

2024-25 ANNUAL REPORT



SOUTHEAST
Climate Adaptation Science Center

**OUR MISSION IS TO DELIVER
SCIENCE TO HELP FISH, WILDLIFE,
WATER, LAND, AND PEOPLE ADAPT TO
A CHANGING CLIMATE.**

When we reflect on the last year of the Southeast Climate Adaptation Science Center (SE CASC), what inspires us is our partnerships to conduct co-produced science for climate adaptation in the Southeast. Behind each successful science project are partners who have been collaborating for years — in some cases decades — to help fish, wildlife, ecosystems, and people adapt to a changing climate. The addition of our five consortium institutions last year brought capacity to reach across our SE CASC footprint, from Arkansas to the U. S. Caribbean and from North Carolina to Florida. Our growing portfolio of research reflects our commitment to meaningfully produce actionable science across the region.

We continued our legacy of workforce development by welcoming a new cohort of graduate student Global Change Research Fellows. Last year marked the first time that SE CASC was able to invite graduate students from across all SE CASC consortium members. The students worked on two team science projects to engage with partners and provide needed data and syntheses on ecological drought and climate-mediated invasive species.

Lastly, we understand that adaptation extends beyond ecosystems. In a time marked by shifting political and institutional landscapes, the SE CASC continues to focus on what endures: advancing actionable, partner-driven science that supports the resilience of the Southeast. We are using the same adaptive approaches we study to sustain and strengthen our mission. Through this commitment, the SE CASC continues to provide useful and used science that helps the Southeast prepare for, and respond to, the futures to come — no matter the challenges of the moment.

We invite you to connect with us as we continue our efforts to enable better climate-smart decisions in the changing landscapes of the Southeast.

**— Consortium Director, Rebecca Irwin and
USGS Regional Administrator, Katherine Smith**

Our team

ELLEN BROWN

USGS, DATA STEWARD

MAIRA BRONDIZIO

ORISE, SCIENCE &
COMMUNICATIONS SCHOLAR

LYDIA CAMPBELL

NCSU, PROGRAM MANAGER

JENNIFER CARTWRIGHT

USGS, SCIENCE COORDINATOR

STEPH COURTNEY

USET, TRIBAL COMMUNITY LIAISON

LEGNA TORRES-GARCIA

USGS, CARIBBEAN LEAD

CARI FURNESS

NCSU, ASSISTANT CONSORTIUM
DIRECTOR

REBECCA IRWIN

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MICHELLE JEWELL

NCSU, COMMUNICATIONS &
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BRE KNUDSEN

USET, TRIBAL COMMUNITY LIAISON

HAILEY SHANOVICH

USGS, RESEARCH ECOLOGIST

KATHERINE SMITH

USGS, REGIONAL ADMINISTRATOR

FAREWELL: We said farewell to several great SE CASC staff in 2024-25: Mitchell Eaton, USGS Research Ecologist, retired after 17 years of public service. Adam Terando, USGS Research Ecologist, is now the Director of Climate Action at Iberostar. Kasia (Catherine) Nikiel accepted a position at the National CASC Climate Adaptation Technical Services team.

Useful & Used Science

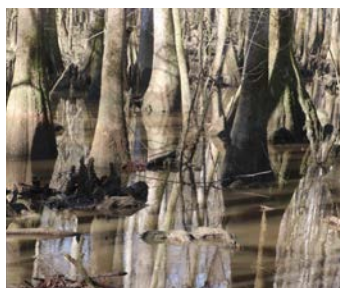
ADDRESSING NEW NEEDS → *Many actionable research projects kicked off during this time period, including:*



Predicting Climate-Driven Invasive Fish Spread to Support Indigenous and State Freshwater Management in Florida

Conditions brought by climate change are threatening the Southeast's freshwater ecosystems by becoming breeding grounds for invasive fish. This project models where invasive fish might spread as temperatures and water conditions continue to change, helping the Florida Fish and Wildlife Commission and the Miccosukee Tribe of Indians of Florida identify vulnerable rivers, lakes, and wetlands and take action to protect native species and habitats.

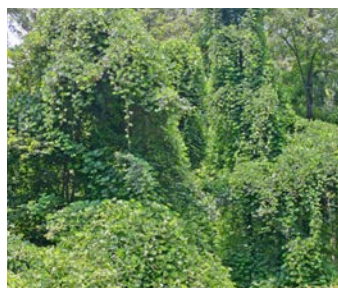
→ Read more: <https://secasc.ncsu.edu/science/invasive-freshwater-fish/>



Responses of Red Oak Species Differing in their Flood Tolerance to Extreme Climatic Events

Bottomland Hardwood Forests in the Lower Mississippi Valley are unique ecosystems of high economic, environmental, and social value. This project studies how red oak species respond to drought and flooding to map areas most at risk. The findings will help land managers and communities protect these forests and the biodiversity they support.

→ Read more: <https://secasc.ncsu.edu/science/bottomland-hardwood-forests/>



Predicting Invasive Vine Spread in the Southeast Using Remote Sensing and Species Distribution Models

Invasive vines threaten the Southeast's ecosystems, farms, and infrastructure. This project combines mapping and modeling tools to predict how these vines spread under changing climates while studying how people interact with them. The work will build regional collaboration, train students, and help managers better protect natural and working landscapes.

→ Read more: <https://secasc.ncsu.edu/science/invasive-vines/>



Evaluating Insect Pollinator Vulnerability to Climate Change in the Southeast and US Caribbean

Pollinators like bees and butterflies are vital but increasingly threatened by climate change. This project will assess how at-risk pollinator species in the Southeast and U.S. Caribbean may be affected, helping wildlife managers prioritize conservation actions and strengthen efforts to protect these essential insects and the ecosystems they support.

→ Read more: <https://secasc.ncsu.edu/science/evaluating-se-pollinators/>

New Partnership Commitments to Tribal Nations

The SE CASC, with support from the United South and Eastern Tribes, outlined commitments to tribal nations and Indigenous communities that emphasize data sovereignty, actionable science with direct tribal benefit, and flexible, adaptive partnerships with free, prior, informed consent. These guidelines aim to support respectful collaboration and meaningful research across changing landscapes and tribal-led priorities.

→ Read the full commitments here: <https://go.ncsu.edu/secasc-tribal-partnership-commitments/>



Highlights from 2024-25

MEET OUR 2024-25 FELLOWS



ALLY BROWN
AUBURN UNIVERSITY



ASUMI SAITO
NC STATE UNIVERSITY



BIGYAPTI NEPAL
NC STATE UNIVERSITY



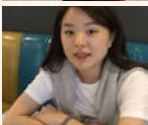
CHRISTOPHER OATES
NC STATE UNIVERSITY



GWEN KIRSCHKE
NC STATE UNIVERSITY



KURT NAQUIN
NC STATE UNIVERSITY



GRACE CHOI
NC STATE UNIVERSITY



HANNAH FERRARO
UNIVERSITY OF THE
VIRGIN ISLANDS



HALINA PYZDROWSKI
NC STATE UNIVERSITY



JAMIE HUERTA
NC STATE UNIVERSITY



HENLEY SARTIN
UNIVERSITY OF
TENNESSEE – KNOXVILLE



RACHEL SMITH
NC STATE UNIVERSITY



**MILEISHA VELÁZQUEZ
LÓPEZ**
UNIVERSITY OF FLORIDA

2024-2025 Global Change Research Fellows

We hosted our 15th cohort of Global Change Research Fellows from interdisciplinary backgrounds. These future leaders met in August 2024 in Tremont, Tennessee, for a week-long field intensive that prepared them for a year of collaborative climate adaptation research.

“The interdisciplinary nature of the fellowship was invaluable for me. A key highlight was contributing to making science actionable through collaboration. From the field intensive to the Southeast Aquatic Drought Workshop, the experiences taught me that communication is as vital as the science itself. Plus, networking with diverse professionals helped refine my research direction and expanded my career horizons.”

— ASUMI SAITO

2025 SCIENCE AND COMMUNICATIONS SUMMER INTERNS

We hosted our 4th cohort of undergraduate interns who spent the summer with the staff at SE CASC to gain knowledge and experience in science and communication. Our interns, **JOLEEN** (University of the Virgin Islands) and **JUAN** (Savannah State University) joined researchers in the field, wrote compelling research summaries, and assisted our pollinator post-doctoral fellow with data synthesis.

→ Read Joleen's reflection here: <https://go.ncsu.edu/secasc-joleen>

→ And Juan's here: <https://go.ncsu.edu/secasc-juan>



Outreach & Engagement

Creating Connections & Collaborations →

The SE CASC continued to meet our partners where they are by contributing to meetings and convenings across the Southeast. A selection of these meetings include:



» CARIBBEAN CONSERVATION

COMMUNITY OF PRACTICE: We continue to partner with USFWS colleagues to cultivate conversations within the group, and participated in the second in-person gathering on St. Thomas on March 25-27, 2025. These connections strengthen existing and facilitate future collaborations in Puerto Rico and USVI. We developed and host the CCCoP landing page and listserv.



» MEETING PARTNERS: SE CASC staff

criss-crossed the Southeast to visit several Consortium partners, including; the Catawba Nation, University of the Virgin Islands, University of Tennessee – Knoxville, Savannah State University, and University of Arkansas – Monticello. These relationship-building visits introduced staff, faculty, and students to the many opportunities available to them as part of the Consortium.



» CONFERENCES AND GATHERINGS:

SE CASC staff and students attended 17 conferences and gatherings; from the National Tribal and Indigenous Climate Conference to SEAFWA and cohosting an aquatic drought workshop with NOAA/NIDIS.

Introducing our Research Affiliate Network

Research Affiliates are non-academic and academic specialists, researchers, and practitioners whose work and expertise align with the mission of the SE CASC. This network of potential collaborators from our Consortium institutions is accessible to anyone interested in furthering useful research in the Southeast.

Scan the QR code at right to find your next collaborator or apply to become a Research Affiliate.



→ go.ncsu.edu/secasc-research-affiliates



SOUTHEAST
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Looking for a tool, dataset, or more information?
Contact our SE CASC staff or see our website.

STAFF: secasc.ncsu.edu/home/about/people/staff/

DATA & TOOLS: secasc.ncsu.edu/resources/data-tools/

RESOURCES: secasc.ncsu.edu/resources/

SCIENCE PROJECTS: secasc.ncsu.edu/science/science-projects-by-fiscal-year/

