

<b>Session Types:</b>	Plenary	Breakout	Plenary Small Group
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**2022 SOUTHEAST CLIMATE ADAPTATION SCIENCE SYMPOSIUM**  
**September 19-21, 2022**  
 The Lodge at Gulf State Park, Gulf Shores, AL



**Monday, September 19, 2022**

<b>Time</b>	<b>Session Title/Leads</b>	<b>Speakers</b>	<b>Session Description</b>	<b>Location</b>
7:00 AM	<b>Registration and Coffee</b>			The Burrow + Ballroom Foyer II & III
8:00 AM	<b>Opening</b>	Becky Irwin (NCSU-SE CASC), Katherine Smith (USGS-SE CASC), Chris Head (Poarch Band of Creek Indians)	Welcome, Symposium Overview	Gulfview Ballroom II
8:30 AM	<b>Visualizing Change in the Southeast</b> <i>Lead:</i> Ryan Boyles (USGS - SE CASC)	Adam Terando (USGS - SE CASC), Georgina Sanchez (NCSU), Jacob LaFontaine (USGS), Amanda Sesser (US FWS - SECAS)	This session will set the stage for projected changes in the Southeast, providing context for how landscapes are changing with regard to climate, water, and ecosystems.	Gulfview Ballroom II
9:15 AM	<b>Management Challenges for Climate Adaptation</b> <i>Lead:</i> Katherine Smith (USGS-SE CASC)	Mitzi Reed (MBCI), Kier Klepzig (USFS), Rafael Gonzalez (USFWS), Monique Harden (DSCEJ); Brian Branciforte (FL FWC)	This panel will address the pressing climate adaptation challenges and related science needs of natural resource managers and communities in the Southeastern US.	Gulfview Ballroom II
10:00 AM	<b>BREAK</b>			Ballroom Foyer II & III
10:30 AM	<b>Breakout Session 1</b>			
	<b>Climate Impacts &amp; Adaptation for At-risk Species</b> <i>Leads:</i> John Tirpak (USFWS), Ryan Boyles (USGS-SE CASC)	Laura Thompson (USGS), Mona Papes (UTK), Tim Male (EPIC), Darren Miller (NCASI)	Changing climate is an added source of risk for threatened and endangered species. This session will explore current practices and research related to managing at-risk species in southeastern ecosystems with perspectives from a panel of species managers, scientists, and policy-thinkers. The panel will engage participants in a discussion on future direction of climate adaptation for at-risk species.	Live Oak
	<b>Holistic Cultural and Natural Resource Management</b> <i>Leads:</i> Erin Seekamp (NCSU), April Taylor (SC CASC)	Brian Zettle (USACE), Courtney Hotchkiss (NCSU), Juan Cancel (Seminole Tribe of Florida)	This panel discussion will focus on breaking down the silos of natural resource or cultural resource management. Current challenges facing integrated management will be shared from a Tribal Nation perspective, a resource management agency perspective, and a university researcher perspective. Strategies for holistic management to integrate Traditional and western knowledge systems will be provided for building future collaborations.	Gulfview Ballroom IV
	<b>Monitoring for Changing Climate and Adaptation</b> <i>Leads:</i> Greg Steyer (USGS), Scott Phipps (AL DCNR)	Beth Stys (USFWS), Mike Osland (USGS), Brian Branciforte (FWCC), Chris Kelble (NOAA)	This session will illustrate how we are monitoring the direct effects of climate change drivers on terrestrial species, wetland habitats, and coastal and marine resources, and will explore how these data can inform the barriers, opportunities and tradeoffs to range shifts for species, habitats and ecosystems. It will include presentations framing the topic followed by a panel represented by federal, state and academic representatives that will discuss with the audience questions such as "What additional baseline information do we need to document anticipated climate-induced range shifts? What system-level indicators are informing conservation and restoration adaptation planning? and How can monitoring enhance knowledge on risks, impacts, consequences and available adaptation options?"	Gulfview Ballroom III

12:00-2:00 PM	<b>Lunch (on your own)</b>			
12:15-1:00 PM	<i>Optional: <b>Tour of the Lodge</b></i>	Chandra Wright (The Lodge at Gulf State Park)	Join us on this 45-minute tour to learn about the history of the Lodge and take a look at some of the elements that make it one of the most sustainable resorts in the world.	Meet at back of Lobby (by the mock sea turtle nest)
2:00 PM	<b>Centering Justice and Equity to Advance Climate Adaptation</b> <i>Leads: Mia Wavrek (USGS-ORISE), Regina Neal-Mujahid (USGS), Emily Brooks (USGS)</i>	Louise Vaughn (USFWS), Donya Frank-Gilchrist (USGS), Mary Williams (DSCEJ), Joey Owle (EBCI)	Successful, community-led responses to climate change require us to center justice, equity, and community autonomy and self-determination in our conservation research and management programs, from how and with whom our organizations or communities partner, to how we conduct scientific research, to how we think about and measure the impacts of our work. This session features examples of justice- and equity-oriented climate adaptation research projects, applications, and partnerships from across the Southeast and Caribbean, as well as lessons learned and best practices for delivering just and equitable outcomes. Finally, the panel will address challenges and opportunities to progressing climate justice goals in the Southeast region.	Gulfview Ballroom II
2:45 PM	<b>Connecting Conservation Across Scales</b> <i>Leads: Mitchell Eaton (USGS-SE CASC), Stephanie Romafach (USGS)</i>	Caleb Hickman (EBCI), Todd Schenk/Victoria Hymel (VT), Hilary Morris (SECAS), Louise Vaughn (SECAS)	Adaptation of natural resource management in response to change is strongest when tight feedback loops produce more immediate signals of costs and benefits, most commonly at highly localized scales and over short time horizons. As problems increase in scope, attenuation of perceived risks and benefits over larger scales and across jurisdictions adds considerable challenges to finding solutions via collaborative decision making. Scale mismatch represents another challenge for managing natural systems, variously characterized as institutional governance misaligned with the biophysical or temporal scale of the resource, or information mismatch in which knowledge is produced at a scale that is of limited use for decision making. In this plenary session, we will hear from a diverse group of scientists and managers on their experiences and perspectives regarding the challenges and considerations of implementing cross-scale conservation practices and adaptation strategies.	Gulfview Ballroom II
3:30 PM	<b>BREAK</b>			Ballroom Foyer II & III
4:00 PM	<b>Global Change Fellows Lightning Talks/Early Career Roundtable.</b> <i>Lead: Aranzazu Lascurain (NCSU-SE CASC)</i>	Geneva Gray (NCSU), Courtney Hotchkiss (NCSU), Megan Johnson (NCSU), Kate Jones (NCSU), Ambar Torres Molinari (NCSU), Justine Neville (USGS), Laura Villegas (Earth Economics)	Present and former fellows will present talks related to conservation and climate decision focused research.	Gulfview Ballroom II
4:30-6:00 PM	<b>Poster/Tools Networking Session: Sharing Science and Tools to Support Adaptation to Climate and Land Use Change</b> <i>Leads: Kristen Fontana (NCSU-SE CASC)</i>		Network with students, researchers, managers, and regional experts as they showcase their research and resources and share management-relevant tools.	Gulfview Ballroom I
6:15-6:45 PM	<i>Optional: <b>Birds, Turtles, &amp; Mice – Oh My!</b></i>	Chandra Wright (The Lodge at Gulf State Park)	Join us for a short 30-minute beach walk to learn about the habitat around the Lodge and some of the protected creatures that can be found here (as well as the efforts to help them).	Meet on Dunes Terrace
<b>Tuesday, September 20, 2022</b>				
7:00 AM	<b>Registration and Coffee</b>			The Burrow + Ballroom Foyer II & III

8:00 AM	<b>Adaptation in Action</b> <i>Lead:</i> Jen Cartwright (USGS-SE CASC)	Mike Osland (USGS), Jaime Collazo (USGS & NCSU), Greg Cope (NCSU), Renee Collini (Mississippi State), Erin Seekamp (NCSU)	This session will present a variety of case studies of successful climate-adaptation projects in the Southeast. Discussion of adaptation actions will address project successes, lessons learned, and science priorities to inform ongoing adaptation efforts.	Gulfview Ballroom II
8:45 AM	<b>Breakout Session 2</b>			
	<b>Changing Fire Management in the Southeast</b> <i>Leads:</i> Adam Terando (USGS-SE CASC), Kevin Hiers (USGS/Tall Timbers)	Kevin Hiers (USGS/Tall Timbers), Brett Williams (Eglin AFB), Kirsten Lackstrom (USC), Scott Covington (USFWS), Marcus Williams (USFS)	Fire management, and in particular the use of prescribed fire, is a well-established practice in the Southeast US. This reflects the confluence of human-objectives, ecosystems, and environmental conditions that have in turn led to this region experiencing the largest annual area of intentional fire in the US. However, anthropogenic climate change poses a challenge to this robust application of fire. Risks associated with the maintenance, reduction, or increased use of fire must be considered given the potential damage to ecosystems, operations, and surrounding human communities. Here we will explore these risks, but also potential adaptation pathways related to these management considerations.	Gulfview Ballroom III
	<b>Nature-based Solutions for Climate Adaptation and Resilience</b> <i>Leads:</i> Katie Warnell (Duke), Kelly Guilbeau (USFWS)	Mary Kate Brown (TNC-Alabama), Dana Brown (Dana Brown & Associates), Carter Smith (Duke University), Katie Warnell (Duke University)	This session will explore the state of the science on how the integration of nature-based solutions in large-scale restoration efforts as well as within local community projects can support climate adaptation and resilience while providing a broad suite of ecosystem services. Case studies will describe implementation and approaches for measuring effectiveness of nature-based solutions such as living shorelines and wetlands in coastal areas and urban greenspace to retain stormwater runoff.	Gulfview Ballroom II
	<b>Evaluation of Actionable Science</b> <i>Lead:</i> Paul Armsworth (UT)	Amanda Hyman (VT), LaDon Swann (MS-AL Sea Grant), Rafael Gonzalez (USFWS)	The goal of actionable science is to undertake research that will provide information practitioner partners can use. But how do we evaluate whether an actionable science project has been successful at achieving this goal? This session will discuss suitable evaluation methods for actionable science projects. It will also explore lessons from past actionable science projects regarding what project characteristics led to research seeing greater uptake by practitioner partners.	Gulfview Ballroom IV
10:15 AM	<b>BREAK</b>			
10:45 AM	<b>World Cafe</b> <i>Lead:</i> Cari Furiness (NCSU-SE CASC)		This session will consist of organizational tables and topical tables that participants join on a rotating basis. Organizational tables provide resources and discussion with stakeholders about management and research partner organizations, while topical tables will support focused discussions on specific topics related to actionable science research and outcomes.	Gulfview Ballroom II
12:45-2:45 PM	<b>Lunch (on your own)</b>			
1:00-1:45 PM	<i>Optional: <b>Tour of the Lodge</b></i>	Chandra Wright (The Lodge at Gulf State Park)	Join us on this 45-minute tour to learn about the history of the Lodge and take a look at some of the elements that make it one of the most sustainable resorts in the world.	Meet at back of Lobby (by the mock sea turtle nest)
2:45 PM	<b>Breakout Session 3</b>			

	<b>Cultivating Coastal Resilience to Global Change</b> <i>Leads:</i> Karen McNeal (Auburn), Renee Collini (PLACE:SLR), Christina Mohrman (GOMA)	Will Underwood (AL DCNR), George Ramseur (Moffatt & Nichol), Kirk Fusco (DEP-FL), Beth Stys (USFWS)	In this session we will learn about current efforts in coastal landscape resilience from a panel of key stakeholders in the Gulf of Mexico and Atlantic Coastal regions where speakers will discuss actionable science research gaps, priorities, and needs for their region. Key problems around coastal and ecosystem management and restoration, landscape resilience and species management, modeling of the ocean-land continuum and natural hazards, and communication and adaption challenges and opportunities will be discussed through a developing participant regional network of researchers and managers during the session.	Gulfview Ballroom II
	<b>Hydro-Climate Events and Extremes</b> <i>Leads:</i> Jacob LaFontaine (USGS), Meredith Muth (NOAA)	Champagne Cunningham (USGS/TN State University), Adam Terando (USGS-SE CASC), Jacob LaFontaine (USGS), Jared Bowden (NCSU), Gregory Cope (NCSU), Simeon Yurek (USGS), Ryan Boyles (USGS-SE CASC), Kasia Nikiel (ORISE/SE CASC)	Information regarding the characterization of, and potential changes in, climate-driven hydrologic extremes such as flooding are needed to support successful planning and science-based decision-making by resource managers who must address complex issues and competing interests. Hydrologic events and extremes not only impact water quantity, but also water quality, species dynamics, and overall ecosystem condition. This session is focused on providing examples of the state of the science regarding characterizing, predicting, and projecting the occurrence of hydrologic extremes and related impacts. Presentations will be followed by a panel discussion about the future direction of research efforts concerning this topic.	Gulfview Ballroom III
	<b>Biological Invasions in the Southeast U.S.: Impacts, Management, and What's On the Horizon</b> <i>Leads:</i> Deah Lieurance (UF), Wesley Daniel (USGS)	Emily Reed (Virginia Tech), Wesley Daniel (USGS), Deah Lieurance (UF), Jess Hartshorn (Clemson)	Biological invasions are a significant threat to biodiversity, ecosystem functioning, human health, and the economy of the United States (U.S.). Currently, the Southeast U.S. is a hotspot for biological invasions. This region has some of the highest numbers of terrestrial and aquatic plant and animal invaders. This session will present information about current invaders in the region, how we coordinate the management of invasive species, and what efforts are underway to identify future invaders.	Gulfview Ballroom IV
4:15 PM	<b>BREAK</b>			Ballroom Foyer II & III
4:45 PM	<b>Moving Priorities Forward</b> <i>Lead:</i> Rebecca Irwin (NCSU-SE CASC)		Report out on gaps identified in Breakouts and Combined sessions, connect back to partner perspectives and map to potential science initiatives.	Gulfview Ballroom II
6:00 PM	<b>ADJOURN</b>			
6:15 PM	<i>Optional: Tour of the Gulf State Park Interpretive Center</i>	Chandra Wright (The Lodge at Gulf State Park)	The Interpretive Center is Alabama's most environmentally friendly building, built to achieve LEED Platinum and full Living Building Challenge certification (as well as being the first-ever FORTIFIED Commercial facility). On this 30 minute tour, we'll explore the unique design features of the Interpretive Center and learn how the facility generates its own energy and drinking water.	Meet in the Ballroom Foyer to receive parking passes and then drive to the Interpretive Center (carpool is suggested).

**Wednesday, September 21, 2022**

<b>Time</b>	<b>Session Title</b>	<b>Leads</b>	<b>Session Description</b>	<b>Location</b>
9:30-10:00 AM	<b>COFFEE SERVICE</b>			Ballroom Foyer II & III
10-11:30 AM	<b>Introduction to Working with Tribal Nations</b>	Casey Thornbrugh (USET-SE CASC), Marie Schaefer (USGS-SE CASC)	An introduction to how to ethically co-create science with Tribal Nations. Areas to be covered include: How to build relationships, How does Tribal sovereignty impact projects, Case examples of ethical projects; Participants will leave with a set of tools to use to build relationships with Tribal Nations.	Gulfview Ballroom III
12:30-5:00 PM	<b>Field Trip to Fort Morgan State Historic Site and surrounding area</b>	Jackie Sablan (USFWS), Heather Tassin (Fort Morgan State Historic Site)	Learn about climate challenges for management of this important cultural resource as well as the surrounding dune and marsh habitats on this field trip to Fort Morgan State Historic Site at the mouth of Mobile Bay. Registration and payment required.	Meet in hotel main lobby by 12:15PM