

WEATHER AND CLIMATE RESILIENCE

IMPACT

S.C. Sea Grant Consortium Compiles Archive of State Resilience Planning Efforts

Taylor Allred and Matt Gorstein, S.C. Sea Grant Consortium

Recap: The South Carolina Resilience Planning Archive is a new research tool on the S.C. Sea Grant Consortium website that provides easy access to recent planning documents from local governments and other entities across the state that focus on resilience or include a resilience element.

Relevance: The archive was developed for the South Carolina Office of Resilience (SCOR) and State Climatologist Hope Mizzell, who is procuring state funding for the Consortium to maintain it. Prior to launch, SCOR struggled to answer the question, “what is everyone doing on resilience?” The archive is the first central hub for South Carolina resilience plans and resolves the impracticality of local planners needing to search for hundreds of plans individually to identify best practices.

Response: S.C. Sea Grant Consortium graduate resilience assistant Taylor Allred gathered, coded, and uploaded relevant reports available online from local governments, state and federal agencies, and non-governmental organizations. Allred also developed an online resilience plan submission form and reviewed the included plans to determine and code in the archive whether they considered future environmental conditions. As of April 7, 2022, the archive contains 372 plans.

Results: The archive is being utilized by the South Carolina Office of Resilience in the ongoing development of the first Strategic Statewide Resilience and Risk Reduction Plan. Local planners are also utilizing the archive. In addition, Allred and S.C. Sea Grant Consortium Executive Director Susan Lovelace were interviewed by Live 5 News and the Associated Press, explaining the archive and offering the public reasons they might find the archive useful, such as anticipating community flooding impacts.

ACCOMPLISHMENTS

S.C. Sea Grant Consortium Awarded Funds from NOAA Climate Program Office to Assess Sea Level Rise in Beaufort County

Brita Jessen, Sarah Watson, Susan Lovelace, Landon Knapp, Katie Finegan, S.C. Sea Grant Consortium

Alicia Wilson, University of South Carolina

Norm Levine, Matt Nowlin, College of Charleston

Recap: The S.C. Sea Grant Consortium and partners were awarded funds from the NOAA Climate Program’s Adaptation Sciences Program to assess groundwater levels in Beaufort County.

Relevance: Coastal communities have approached planning for sea level rise in varying ways. However, many of

those methods focus on flooding without necessarily connecting surface inundation with what happens below ground and to the systems that allow us to live in places. Co-production methods are being increasingly emphasized as means to achieve advancements in resilience to climate change.

Response: The Consortium formed an interdisciplinary team of researchers and extension professionals and was awarded \$300,000 to investigate the “so what” part of how sea level rise affects communities by studying how these systems may be disrupted by extreme events and sea level rise. By taking a proactive approach, we can then help communities better plan for these failures and reduce the disruption and damage that will come as sea level continues to rise.

Results: Ten groundwater well sites have been identified, and engagement with community members has begun in four neighborhoods.

S.C. Sea Grant Consortium Conducts Vulnerability Assessment for the Town of Edisto Beach

Sarah Watson, Landon Knapp, Matt Gorstein, Shelly McComb, S.C. Sea Grant Consortium

Recap: The S.C. Sea Grant Consortium led the development of a vulnerability assessment for the Town of Edisto Beach.

Relevance: Edisto Beach is a tiny and low-lying barrier island already experiencing substantial impacts from flooding and sea level rise, including routinely failing septic systems, persistent street flooding from tidal flooding and heavy rain, and corroding underground infrastructure. The Consortium was approached in February 2020 by Edisto Beach town leaders for assistance in understanding future risks and impacts related to sea level rise and flooding.

Response: The Consortium identified the opportunity to assist Carolinas Integrated Sciences and Assessments with continuing their Vulnerability Consequences and Adaptation Planning Scenarios process research as the town had not done any prior planning. Community engagement took place in 2020 and 2021. The College of Charleston Lowcountry Hazards Center assisted by providing high resolution bathtub model mapping and using various approaches to collect flooding data from residents.

Results: Edisto Beach’s first ever vulnerability assessment - a 55 page report reviewed by six external experts, details tipping points for when municipal services, as currently existing, may cease to function effectively. It also highlights resident and town staff concerns for the future and presents potential next steps, including a detailed analysis of groundwater rise and development of groundwater impact timelines based on sea level rise scenarios.

S.C. Sea Grant Consortium Provides Coordination and Technical Assistance for Beaufort County Sea Level Rise Task Force

Sarah Watson, S.C. Sea Grant Consortium

Recap: Beaufort County is developing a long-term resilience plan and updating its comprehensive plan with technical assistance from S.C. Sea Grant Consortium, which in 2021 finalized its draft of the resilience plan and submitted it to the county.

Relevance: Beaufort County has substantial vulnerabilities to flooding and sea level rise. As such, the county has

worked with the Consortium since 2012 on sea level rise planning. The Consortium developed, in partnership with the Carolinas Integrated Sciences and Assessments, a sea level rise action plan for the county in 2015, recommendations from which were incorporated in the county's comprehensive plan.

Response: Consortium staff has submitted its draft of the long-term resilience plan to the county for it to revise and finalize. The Consortium also was awarded a \$300,000 Adaptation Sciences program grant that will accomplish multiple recommendations included in the long-term resilience plan and the new comprehensive plan.

Results: The county is finalizing a new long-term resilience plan that highlights specific steps the county can take to increase resilience. Municipalities that are serving on the task force can incorporate the recommendations into their future planning work. Several recommendations in the draft plan have been woven throughout the comprehensive plan, adopted in fall 2021. The county also is a partner in a research grant awarded by the Adaptation Sciences grant program through NOAA's Climate Program Office.

S.C. Sea Grant Consortium Leads Coastal Retreat Communication Webinars

Sarah Watson, S.C. Sea Grant Consortium

Recap: The S.C. Sea Grant Consortium's coastal climate and resilience specialist was a featured speaker at a workshop on managed retreat.

Relevance: Managed retreat is being increasingly examined as a potential solution to mitigating risk from coastal climate hazards, but it is very much a controversial issue as it alludes to people leaving their homes and communities.

Response: The Consortium's Sarah Watson developed a workshop on communicating and engaging communities about retreat in partnership with Susanne Moser and presented that workshop at the managed retreat conference in June 2021.

Results: The workshop highlighted practices about how to begin the conversations about retreat that are not hypothetical and also highlighted how communicators can support themselves in these difficult conversations. The virtual session had about 85 participants. In July 2021, Watson participated on a webinar panel about communicating and engagement about managed retreat in the Mid-Atlantic Region for NOAA Office for Coastal Management.

Consortium Instructs Community Nursing Students on Climate Change Impacts

Sarah Watson, S.C. Sea Grant Consortium

Recap: At the request of Medical University of South Carolina faculty, S.C. Sea Grant Consortium extension specialists created an asynchronous climate change impacts education module for use by faculty in training 80 students at the MUSC College of Nursing.

Relevance: Nurses working in communities are at the ground level of climate change health impacts. However, the MUSC faculty that teach them have had little training on climate change and impacts. College of Nursing faculty reached out to Consortium staff for assistance in providing community nursing students with basic information in their population health class.

Response: Extension specialists developed a learning module on climate change and impacts for faculty to use in the MUSC population health class. Responding to the educational needs and professional challenges for community nurses, they created the module to meet learning objectives that included knowledge of climate change impacts in the Southeast U.S., use of sea level rise and risk tools, and ability to assess public health impacts from flood to water, wastewater, and public health infrastructure.

Results: MUSC worked with the Consortium on a 45-minute lecture delivered to two sections of the program's public and environmental health course in October 2021. Students learned about how climate change and sea level rise are affecting the Charleston region along with implications for public health, mental health, and emotional trauma, and resulting and related social challenges. MUSC professors said the lectures provided the most robust question and answer discussion sessions in the semester.

S.C. Sea Grant Consortium Provides Technical Assistance to S.C. Office of Resilience

Sarah Watson, Landon Knapp, Susan Lovelace, Matt Gorstein, Brita Jessen, S.C. Sea Grant Consortium

Recap: The S.C. Sea Grant Consortium provided substantial assistance and capacity for the newly created South Carolina Office of Resilience as the office was forming and hiring staff.

Relevance: The South Carolina governor and state legislature recognized the need to address community resilience with a dedicated state agency after repeated flooding impacts.

Response: Following similar efforts in the Southeast, the state created a statewide office of resilience to address community resilience needs.

Response: Assistance from the Consortium included training sessions on climate science and implications of climate change to South Carolina, a presentation to SCOR's advisory task force on climate projections and implications for statewide resilience planning, an analysis of sea level rise and climate planning scenarios used by other states, a compilation and analysis of various plans in the state to help SCOR identify what is going on with regard to resilience activities, and communications training.

S.C. Sea Grant Consortium Helps College of Charleston Class Develop Vulnerability Assessments for Local Communities

Sarah Watson, Landon Knapp, S.C. Sea Grant Consortium

Recap: The S.C. Sea Grant Consortium provided assistance in 2020 to College of Charleston students conducting vulnerability assessments for James Island and northern Charleston County communities, and final reports were delivered to the municipalities in March 2021.

Relevance: The College of Charleston approached S.C. Sea Grant Consortium in March 2020 to develop and teach a graduate-level course on applied coastal resilience. The primary goal of the class was to give graduate students in the Master of Environmental and Sustainability Studies program real-world experiences.

Response: Through a partnership with Charleston County, two study areas were identified: James Island and the northern part of Charleston County, including McClellanville and Awendaw. Eight students worked with the communities, under the guidance of the Consortium's Sarah Watson, to develop a basic vulnerability assessment

and recommendations for next steps in building resilience. Municipal and county staff were involved throughout the process, giving students the opportunity to learn more about jobs and post-graduate professions.

Results: Over the course of the semester, students broadened their skill sets and delivered both a presentation and report of the vulnerability assessment and recommendations. The final reports were shared with the communities in March 2021.

S.C. Sea Grant Consortium Provides Risk Communication Training to State Agency Staff and Regional Sea Grant Colleagues

Sarah Watson, S.C. Sea Grant Consortium

Recap: The S.C. Sea Grant Consortium provided risk communication training to state agency staff and regional Sea Grant colleagues.

Relevance: Ensuring best practices on community engagement and risk communication are paramount when working with communities to plan for climate resilience.

Response: The Consortium provided training sessions on risk communication and community engagement to the S.C. Office of Resilience, a team of practitioners connected with the Beaufort County adaptation sciences project, and a team from North Carolina Sea Grant and the North Carolina Office of Recovery and Resilience. Breakout sessions were included to begin applying what participants learned to specific projects.

Results: Attendees learned skills and techniques for connecting and communicating with residents and stakeholders.

S.C. Sea Grant Consortium's New Tidal Monitoring Initiative Puts Local Data in the Hands of Local Communities

Landon Knapp, S.C. Sea Grant Consortium and Lowcountry Hazards Center, College of Charleston

Recap: A tidal monitoring initiative supported by the S.C. Sea Grant Consortium has resulted in 13 new tide gauges installed along the state's coast, with an additional 25 planned for installation across coastal North and South Carolina in 2022.

Relevance: The low-lying coastal region of South Carolina is highly vulnerable to tidal flooding and has experienced repeated impacts from both extreme and chronic flooding over the past decade. The complexity of these tidal systems combined with the lack of widely distributed monitoring equipment has resulted in a lack of understanding of how to prepare for and respond to these events for local communities.

Response: S.C. Sea Grant Consortium provided guidance to S.C. Beach Advocates and American Shore and Beach Preservation Association to support the installation of tidal monitoring stations in South Carolina communities. The tide gauges were initially funded through a public-private partnership. A grant application supported by the Consortium was awarded in 2020 by the Southeast Coastal Ocean Observing Regional Association to expand the deployment of sensors to an additional 40 communities across coastal North and South Carolina in 2021-2022.

Results: Thirteen new tide gauges were installed in the state, with an additional 16 installed in North Carolina, greatly increasing the coverage of tidal monitoring in the region. Local administrators from each municipality

receiving a gauge participated in a quarterly call to provide feedback on installation, lessons learned, and data usefulness –creating a coalition for the use of these new technologies at the local level that persists. A public dashboard has been launched to view the data, including newly developed local tidal predictions and a caution threshold.

S.C. Sea Grant Consortium Researchers Work to Provide Real-Time Conditions to Help Residents Avoid Driving on Flooded Roads

Norman Levine and Lancie Affonso, College of Charleston

Recap: S.C. Sea Grant Consortium researchers are creating a map application to provide real-time flood conditions on roads to end-users.

Relevance: Residents in coastal South Carolina face an ever-growing struggle with understanding when and where tidal and rainfall flooding are going to impact their daily routines.

Response: S.C. Sea Grant Consortium researchers at the College of Charleston are creating a map application to address this issue. Gauge station tidal heights and current and predicted rainfall conditions are being incorporated into the product via a web-based interactive mapping portal. This will inform residents across the region about the timing and location of flooding on a real-time basis, and it will also provide general information and education on potential surge, hurricane, and long-term vulnerability problems.

Results: Researchers developed a database of modeled tidal flooding severity for every road in Charleston County, S.C., linking set intervals of tide height to corresponding flood intensity. A hydrologically-conditioned digital elevation model is being shared with researchers and managers. Additionally, the foundation for the application was designed and tested. Eleven undergraduate students from the College of Charleston's Computer Science program hired to work on the project received training in hydrology, atmospheric science, and GIS programming.

S.C. Sea Grant Consortium and College of Charleston Train GIS Students by Working on Real-World Issues

Landon Knapp, S.C. Sea Grant Consortium and Lowcountry Hazards Center, College of Charleston

Recap: The S.C. Sea Grant Consortium partnered with the College of Charleston to provide GIS mapping resources to coastal communities by having student projects focus on real-world issues communicated by communities and collaborators.

Relevance: Coastal communities of South Carolina require GIS mapping and analyses to address increasing community and environmental hazards, but many lack the necessary technical and financial resources.

Response: Partnering with professor Norman Levine at College of Charleston, students learning GIS conducted class projects on issues of importance to coastal communities/collaborators. During spring 2021, a flood management study was conducted for the Coosaw Creek community. In fall 2021, valuations of estuarine shoreline property and associated demographics were conducted for Beaufort and Charleston counties, and an analysis was performed by the students to determine likely locations of septic systems in Beaufort County.

S.C. Sea Grant Consortium Provides Data and Expertise to Guide Municipal Planning Efforts

Landon Knapp, S.C. Sea Grant Consortium and Lowcountry Hazards Center, College of Charleston

Recap: S.C. Sea Grant Consortium staff provided data and expertise to guide the development of municipal plans.

Relevance: The coastal S.C. region is highly vulnerable to tidal flooding and flooding from heavy rain as well as development pressures that can exacerbate those hazards. Municipalities in the region need specific local data to better understand under what conditions flooding occurs so they can plan and respond effectively.

Response: In partnership with researchers at the College of Charleston's Lowcountry Hazards Center, S.C. Sea Grant Consortium provided data and technical expertise describing land use and development patterns to inform the creation of the Berkeley County Comprehensive Plan. Coastal Resilience Program Specialist Landon Knapp additionally guided the development of the Charleston County Regional Hazard Mitigation Plan and advised on an initiative to develop a Comprehensive Marsh Management Plan for Kiawah Island, S.C.

Results: The One Berkeley Comprehensive Plan was released in 2021, as was the Charleston County Regional Hazard Mitigation Plan. In January 2021, the Town of Kiawah Island awarded a contract to consultants developing the first Comprehensive Marsh Management Plan for the Town. The plan will be guided by research from the Consortium as well as staff expertise during its development in 2022.

S.C. Sea Grant Consortium Initiates Long-Term Monitoring of Groundwater Table and Mapping of Marsh Vulnerabilities

Landon Knapp, S.C. Sea Grant Consortium and Lowcountry Hazards Center, College of Charleston

Recap: With the growing importance of understanding characteristics of the groundwater table for both hazard mitigation and environmental health, S.C. Sea Grant Consortium, alongside a team of experts, began a long-term monitoring study with the installation of a network of groundwater wells across a barrier island system and mapped the vulnerabilities of the salt marsh system and mitigation options.

Relevance: While much attention is paid to the flow and accumulation of surface water, little is known about the characteristics of the groundwater table and its influence on the plant, animal, and human communities in coastal areas. The depth and salinity of subsurface groundwater are major factors influencing the health of coastal ecosystems and flood conditions impacting people. The marsh also provides critical ecosystem services to humans and wildlife and faces a variety of stressors.

Response: The Town of Kiawah Island and National Fish and Wildlife Foundation funded a collaborative research project led by S.C. Sea Grant Consortium, Kiawah Conservancy, and the College of Charleston. The project funded graduate-level students to install 18 monitoring wells to sample groundwater conditions across different elevations, soil types, and locations. Five wells additionally recorded salinity. The vulnerability of salt marsh habitat was mapped with recommendations for oyster-based living shoreline implementation to mitigate marsh losses.

Results: In January 2021, the Town of Kiawah Island awarded a contract to consultants developing the first Comprehensive Marsh Management Plan for the Town, which will be guided by the results of these studies.

Beach Erosion Research and Monitoring

Katie Finegan, S.C. Sea Grant Consortium/Coastal Carolina University

Paul Gayes, Coastal Carolina University

Recap: S.C. Sea Grant Consortium and Coastal Carolina University calculated the sediment volume change on beaches at Surfside, Garden City and North Myrtle Beach to help characterize and manage erosion as part of annual survey profiles required to determine future work in the Grand Strand Renourishment Project by the U.S. Army Corps of Engineers.

Relevance: The Grand Strand beaches in Horry County are major tourist destinations that help support the local and state economy. The beaches experience shoreline changes as a result of various coastal processes including sea level rise and storms. The health of the beaches is important to track and maintain in order to help communities manage their shoreline changes. The U.S. Army of Engineers requires that Horry County and the City of North Myrtle Beach monitor the Grand Strand beaches annually to assist in their future renourishment project planning.

Response: The Consortium processed and analyzed the beach profile surveys for 83 transects covering 19 miles of oceanfront shoreline within Horry County.

Results: Two separate reports were produced which provided graphical and textual explanations of the shoreline changes observed in 2020 and 2021. These reports were delivered to Horry County, City of North Myrtle Beach, and U.S. Army Corps of Engineers to assist in determining timing of the next renourishment event.

S.C. Sea Grant Consortium and Partners Use Virtual Reality Storm Surge Simulations to Increase Risk Awareness

Katie Finegan, S.C. Sea Grant Consortium/Coastal Carolina University

Jill Gamble and Nina Sassano, Georgia Sea Grant Sun Joo Ahn, University of Georgia

Matt Browning, Clemson University

Recap: S.C. Sea Grant Consortium and its partners provided training and piloted a tandem virtual reality simulation to help drive home the concepts and risks associated with storm surge for individuals throughout coastal Georgia and South Carolina.

Relevance: Although storms and coastal populations in the Southeast are increasing, many people living at the coast have not experienced a hurricane. They are unfamiliar with what storm surge is, the damage it can cause, and what actions they can take to protect their home. Using a virtual reality storm surge simulation offers the chance to “redo” the experience after taking preventative actions. This project is important in improving how extreme weather risks and their associated preparative actions are conveyed.

Response: The Consortium began providing expertise on the development of the virtual reality simulation in addition to the training modules on storm surge and mitigation actions.

Results: The Consortium made a connection with the South Carolina Beach Advocates conference to allow the team to perform a pilot study of the virtual reality experience and receive feedback for improvement. The virtual reality simulation was tested on 43 individuals who represented various demographic groups all with backgrounds in the coastal field.

S.C. Sea Grant Consortium Begins Process to Join Multi-State Effort to Deploy Temporary Weather Stations Ahead of Storms

Katie Finegan, S.C. Sea Grant Consortium/Coastal Carolina University

Forrest Masters, University of Florida

Britt Raubenheimer, Woods Hole Oceanographic Institution

Spencer Rogers, N.C. State University/North Carolina Sea Grant

Recap: S.C. Sea Grant Consortium worked with partners in nearby states to add South Carolina to the Project Sentinel effort, which deploys temporary weather stations before landfall of a tropical cyclone in order to measure real time wind speed, water depth, and wave height, and to provide live video feeds.

Relevance: Existing monitoring stations generally report wind or hydrodynamic conditions, but not both. Further, these monitoring stations may not be close to the landfall of a tropical cyclone or are not engineered to operate in and measure extreme conditions. The data collected from Project Sentinel stations provides real time data to weather apps, news outlets, and emergency operations centers, and can be used for modeling. This project has partners in North Carolina and Florida, so adding capacity in South Carolina will increase its reach.

Response: The Consortium contacted the Project Sentinel team in an effort to learn about the project and establish a partnership to help bring this project to communities in South Carolina. The Coastal Processes Program Specialist coordinated with the Ocean and Coastal Resource Management Office to learn their permitting requirements to implement these towers, and began seeking towns and cities that would be willing to participate in hosting one of these towers.

S.C. Sea Grant Consortium Initiates Effort to Establish Coast Snap Station in Horry County

Katie Finegan, S.C. Sea Grant Consortium/Coastal Carolina University

Ian Conery, U.S. Army Engineer Research and Development Center

Recap: The S.C. Sea Grant Consortium initiated contact with the U.S. Army Engineering and Research Development Center to discuss establishing an Horry County Coast Snap station, which would encourage people to take and submit photos of the shoreline from the same vantage point to measure how the beach is responding to various events such as king tides, storms, and sea level rise.

Relevance: The Grand Strand beaches in Horry County are major tourist destinations that support the local and state economy. The beaches experience shoreline changes as a result of various coastal processes. The numerous visitors to the beaches provide a valuable citizen science resource to assist in monitoring how they are affected by various events. This project also presents an opportunity to educate the public on shoreline erosion and renourishment events.

Response: The Consortium plans to involve students from Coastal Carolina University in maintaining and processing the Coast Snap station. Future work will engage the U.S. Army Corps of Engineers and communities in Horry County in determining a suitable station location. This will be the first Coast Snap station in South Carolina.

S.C. Sea Grant Consortium Develops New Coastal Processes Extension Advisory Committee

Katie Finegan, S.C. Sea Grant Consortium/Coastal Carolina University

Recap: The S.C. Sea Grant Consortium built capacity and external partnerships through the establishment of the Coastal Processes Extension Advisory Committee.

Relevance: In October 2021, the Consortium hired a Coastal Processes specialist to establish a sustainable extension program with the Weather and Climate Resilience programmatic focus area to address issues related to the coast within South Carolina. Building a successful extension program requires inclusive and constructive collaboration with partners throughout the state to enhance the reach into the important communities served.

Response: The purpose of the committee is to discuss and identify issues impacting our coastal natural resources and the communities dependent upon them, and assist with the formulation of solutions to address the identified needs of constituents developed through strategic planning priorities. In March 2022, the Consortium will convene the first Coastal Processes Extension Advisory Committee meeting.

S.C. Sea Grant Consortium Researchers Examine Sea Level Rise Risks Among Vulnerable Populations

Mostafa Batouli, The Citadel

Recap: S.C. Sea Grant Consortium researchers conducted a sentiment analysis to track the perceptions of households, from their posted tweets, about the risk of an unfolding natural disaster (a hurricane).

Relevance: Recurrent flooding exacerbated by sea level rise poses a significant threat to the function and performance of coastal infrastructure systems. Local governments and infrastructure agencies in South Carolina are planning adaptation measures. Understanding the evolution of social vulnerability in the long-term can enable decision makers to anticipate the future needs of vulnerable populations and design methods of responding to their needs.

Response: Twitter and census data and geographic and infrastructure maps were used to identify infrastructure, socioeconomic, and regional vulnerabilities. Sentiment analysis was used to track the perceptions of households, from their posted tweets, about the risk of an unfolding natural disaster (a hurricane). The content of the Twitter data was analyzed to detect certain physical vulnerabilities and/or failures of critical infrastructure. Correlating the sentiments and community characteristics enabled researchers to identify socioeconomic vulnerabilities and detect regional vulnerabilities.

Results: Those working in service occupations, entertainment and recreation, and unpaid family workers had the most negative sentiments about the approaching hurricane. This is attributed to the loss of wages for certain occupations due to hurricane evacuations. Also, it was found that African American and Hispanic populations had significantly worse sentiments compared to White and Asian counterparts. Lastly, a significant gender gap was found in the sentiment about the storm, with females having lower sentiment scores than males.

S.C. Sea Grant Consortium Analyzes Hydrological, Economic Impacts to Coastal Community Access During Nuisance Floods

Dan Hitchcock, Marzieh Motallebi, Amy Scaroni, and Bo Song, Clemson University

Recap: As part of a Southeast regional project, S.C. Sea Grant Consortium researchers continue to examine green infrastructure interventions to mitigate impacts of nuisance flooding on access to coastal areas.

Relevance: Coastal resilience research related to infrastructure in the Southeastern United States is critically needed, as extreme weather (e.g. hurricanes, flooding) increasingly impact our coastal communities and economies. This regional research effort will allow for transferability of results across and among various states with a positive impact for the region.

Response: S.C. Sea Grant Consortium researchers at Clemson University are working with coastal municipalities to identify areas where access is impacted by nuisance flooding and evaluating cost-effective green infrastructure interventions.

Results: Researchers are assimilating a variety of data to map hot spots in ArcGIS, focusing on underserved communities and major flood prone communities on the immediate coast. Economic data collection related to how access limitations or denials impact local businesses and residents continues throughout the Southeast, and researchers are mining and comparing costs associated with grey versus green infrastructure flood mitigation strategies.