# COASTAL SCIENCE SYMPOSIUM 2022 PROCEEDINGS

**Hosted by the College of Coastal Georgia**

Friday, December 2
9:00 am – 12:00 pm
Stembler Theatre and Campus Center Lobby

# WELCOME

Welcome to Coastal Science Symposium 2022, hosted by the College of Coastal Georgia. The annual event brings together students, faculty, collaborators, and community members to explore coastal and marine science research and applications to society. This year's program features a keynote address by Dr. Samantha (Mandy) Joye, a Regents' Professor in the Department of Marine Sciences at the University of Georgia who has made fundamental contributions in ocean biogeochemistry and microbial ecology. The symposium also highlights the work of Coastal Georgia students, who will present posters on their research and experiential learning in coastal ecology, conservation, environmental science, and more. And we are happy to welcome back our community partners, who will provide educational exhibits and opportunities to get involved in science and conservation on the Georgia coast.

Thank you for participating and for supporting our students!

# TABLE OF CONTENTS

# SYMPOSIUM PROGRAM

**Campus Center Lobby**
9:00 Student Poster Presentations

**Stembler Theatre**
9:30 Welcome
**Dr. Tate Holbrook**, Associate Professor of Biology
**Dr. Michelle Johnston**, President
**Dr. Kimberly Takagi**, Assistant Professor of Environmental Science

9:45 Keynote Address: Constraining the Blue Carbon Potential of Coastal Wetlands
**Dr. Samantha (Mandy) Joye**, Regents' Professor and Athletic Association Professor of Arts & Sciences, Department of Marine Sciences, University of Georgia
Followed by Q&A

**Campus Center Lobby**
10:45 Student Poster Presentations
Partner Exhibits
Refreshments

# KEYNOTE PRESENTATION ABSTRACT

## Constraining the Blue Carbon Potential of Coastal Wetlands

**Samantha B. Joye**
University of Georgia, Department of Marine Sciences

Coastal environments - salt marshes, mangroves, kelp forests, and seagrass meadows - sequester a disproportionately large amount of atmospheric carbon over long timescales. Such so-called "blue carbon" reservoirs cover only 2.3-7.0 million $km^2$ of ocean area (~0.2%) but they account for ~50% of the carbon burial in marine sediments. The global carbon accumulation rate for salt marshes is estimated to be 244.7 ± 26.1 g C $m^{-2}$ $yr^{-1}$ and radiocarbon dating suggests that this carbon is sequestered for millennia. Marsh microorganisms catalyze the hydrolysis and fermentation of buried organic carbon, converting it to soluble intermediates and terminal end products that are then exported as methane or nitrous oxide to the coastal ocean via groundwater flow or to the atmosphere by diffusive fluxes. The fate and transport of more climate active greenhouse gases such as methane and nitrous oxide in coastal ecosystems is poorly understood. Production methane and nitrous oxide reduces the net climatic cooling effect of carbon burial in coastal soils. Soil-atmosphere fluxes of methane and nitrous oxide across marsh ecosystem boundaries are even less constrained. The dynamics between microbial production and consumption of methane, fluxes of nitrous oxide, the uptake of DIC into the particulate organic carbon pool, and the extent to which this balance translates into the actual blue carbon potential of coastal ecosystems are major research goals moving forward. I will discuss trace gas dynamics in coastal marshes, coastal hammocks, and beaches near Sapelo Island Georgia to reveal the role of methane production in blue carbon sequestration.

# POSTER PRESENTATION ABSTRACTS

Presenter(s) in bold

## Habitats and Nectar Plants Used by Migratory Butterflies at Cannon's Point Preserve

**Kaylee Alexander**, **Ashley Haymans**, **Kendall Kurian**, **Ricky Livermore**, and C. Tate Holbrook
College of Coastal Georgia, Department of Natural Sciences

Migratory butterflies are threatened worldwide by habitat loss, climate change, and other factors. The Butterflies of the Atlantic Flyway Alliance (BAFA) is a collaboration between land management entities and citizen scientists in coastal Georgia to better understand and safeguard natural resources that are critical to sustaining healthy populations of migratory butterflies. We partnered with the St. Simons Land Trust to conduct BAFA surveys at Cannon's Point Preserve (CPP), focusing on three focal species: the gulf fritillary (*Agraulis vanillae*), monarch (*Danaus plexippus*), and cloudless sulfur (*Phoebis sennae*). These surveys have been conducted every fall since 2019 by College of Coastal Georgia Conservation Biology students and volunteers. In migration surveys, we identified and counted butterflies migrating through different habitats (disturbed, forest, saltmarsh). In nectar plot surveys, we identified each butterfly species and the flowering plant species they fed on for nectar. We then analyzed preliminary results from 2019-2022 to determine (1) whether migration activity varies between habitats and (2) which nectar plant species are most frequently visited by migratory butterflies at CPP. Migration activity was highest at the saltmarsh survey point, followed by the previously disturbed and forested habitats. *Salvia* (sage) was the plant genus most visited by nectaring butterflies. BAFA data from CPP

and other partner sites can be used to develop habitat management plans to support populations of migratory butterflies along the Georgia coast.

## Aquarium Science Internship at UGA Marine Extension

**Benjamin Angalet**
College of Coastal Georgia, Department of Natural Sciences

During the Summer of 2022, I held the position of Aquarium Science Intern at the University of Georgia Aquarium on Skidaway Island. The aquarium's vision, as a part of UGA Marine Extension, is to educate the public on the inhabitants of Georgia's coastal waters and how they influence both humans and their environment. My job as an intern was to assist the two aquarium curators in their day-to-day operations, including aquarium system maintenance, aquarium system construction, animal husbandry, and specimen collections. In addition to these responsibilities, I also engaged with the public and aided their understanding of aquatic biology and ecology. This ten-week internship also included a few unscheduled (but welcome) events, such as assisting Georgia Aquarium researchers with shark longlining operations and giving fossil talks to the aquarium's summer camp kids. Not only were personal connections established, but also professional ones that could potentially aid in my search for a suitable graduate school. The experiences I had at the UGA Aquarium culminated into an incredibly motivating and insightful summer with which I can further my academic and career pursuits.

## Wind Velocity Influence on Tidal Flooding at the Dock of Little Cumberland Island, Georgia

**Conlan Bertram** and Robin McLachlan
College of Coastal Georgia, Department of Natural Sciences

Little Cumberland Island (LCI) is one of the barrier islands along the Georgia coast and is located just north of Cumberland Island. LCI is owned and managed by a homeowner's association and requires the homeowners to keep the island as natural as reasonably possible. Access to the island is by boat and a single dirt road connects the main island to the only dock. Many of these roads on the southern end of the island are susceptible to tidal flooding and erosion, which has resulted in frequent stranding of residents on the island during extreme high tide and storm events. Residents have reported a connection between faster wind speeds and higher tidal flooding; this study aims to validate and quantify their claims. Tidal data were collected using seven HOBO pressure sensors deployed in marshes along the most vital low-elevation roads. Data analyses were performed in Microsoft Excel and Octave. To quantify wind velocity's effect on tidal flooding, NOAA predicted tidal elevations for Jekyll Island were subtracted from measured tidal elevations at the dock. Linear regressions were performed, and three-dimensional scatter plots were created to visualize the impact of wind velocity on tidal flooding of the roads. Results indicate offshore wind velocity recorded by NOAA buoy 41008 has a strong correlation with tidal flooding while local onshore wind velocity does not. In conclusion, this study validates the residents' observations and finds that enhanced tidal flooding occurs when offshore wind exceeds 20 miles per hour from the southwest, 100-210 degrees.

## Anthropogenic Impacts on Water Quality and Plant Health at New Hope Trailer Park Wetland

**Conlan Bertram**, **Soraya Byrdsong**, **Isabelle McCurdy**, **Katie Richardson**, and Emily Tarsa
College of Coastal Georgia, Department of Natural Sciences

Coastal wetlands serve as carbon sinks and buffers against storms, serving important ecological services for coastal towns. Their degradation impacts the functions of wetlands and can negatively impact coastal towns. The wetland that borders the New Hope Trailer Park in Brunswick, GA is an interesting study site in that it provides opportunities to assess anthropogenic impact to wetlands along the upland zone and the zone of inundation. Humans have impacted the site by adding multiple retention/wastewater ponds, as well as industrial operations that were conducted near the wetland-upland interface. To assess the impacts to this site, we established three transects across areas of varying anthropogenic impact including a control transect in a relatively unimpacted area of the marsh and two transects along the marsh-upland and upland zones. Within each transect, we took soil cores every 5 meters for 50 meters using a T-probe corer, dried these cores, and suspended them in DI water for roughly 7 days. Following suspension, we measured 16 parameters in the soil using Varify test strips. Out of these, we looked at hardness, sulfate, and salt concentrations, but did not expect to see any significant difference in the concentrations along each transect, although there were varying levels of plant stress observed along the transects. The wetland site was more brackish than assumed, which could have influenced results. Further research should be done to determine the anthropogenic effects on the wetlands and the plants within them.

## Assessing Invasive Plant Populations and Developing Outreach Resources for the St. Simons Land Trust

**Soraya Byrdsong**, **Harley Head**, **Nellie Little**, and C. Tate Holbrook
College of Coastal Georgia, Department of Natural Sciences

Nonnative invasive plants often outcompete native plant species, degrading ecosystems and disrupting animal migration patterns. Monitoring and controlling populations of invasive species is key to maintaining healthy natural ecosystems. The St. Simons Land Trust (SSLT) has been working to identify and remove invasive plants across many of their conservation properties. Invasive plant surveys were started in 2021 by Conservation Biology students at the College of Coastal Georgia, who determined that invasive species were primarily found along frequently trafficked areas. We continued and expanded those surveys while developing outreach resources to assist SSLT in monitoring, removing, and educating about invasive plant populations. Our preliminary results suggest that most invasive plants are associated with historical and modern human occupation, leading us to believe that education and outreach is imperative in combating invasive species.

## Baseline Water Quality Testing in New Hope Plantation Wetlands, Brunswick Georgia

**Julia Couey**, **Nicholas Hamilton**, Jonathan Warehime, and Emily Tarsa
College of Coastal Georgia, Department of Natural Sciences

The New Hope Plantation in Brunswick, GA has a long history of anthropogenic alterations including industrial, agricultural, and residential uses during the last century. These anthropogenic alterations have likely impacted the health and function of the freshwater, brackish, and saltwater coastal wetlands on-

site. These areas are crucial for carbon, nitrogen, and water cycling. To measure the extent of influence and health of this system, samples and measurements collected baseline water quality measurements of temperature, salinity, total dissolved solids, pH, and concentrations of nitrogen, ammonia, phosphorus, dissolved oxygen, and carbon dioxide along two transects in the freshwater tidal marsh at two timepoints. Testing parameters led to elevated concentrations of ammonia along a testing transect. The source of these elevated concentrations was undetermined by preliminary testing. The wetlands ecology has multiple factors and stressors that could influence atypical concentrations of water quality parameters. Future testing should include more frequent testing as well as installing piezometer wells to establish groundwater flow and quality.

## The Effects of Salt and Freshwater Marsh Ecosystems on Fiddler Crab Diversity in Brunswick, Georgia

**Abbey Crossman**, **Victoria Savino**, **Caroline Singleton**, **Kathryn Nottingham**, and Emily Tarsa
College of Coastal Georgia, Department of Natural Sciences

The purpose of this observational study was to assess the presence of Red-jointed, Mud, and Square-back marsh fiddler crabs at a wetland mitigation bank located at New Hope Trailer Park (off Highway 17 in Glynn County) to see if there was a difference between the health of freshwater versus saltwater crab populations at a total of six sites (1a, 1b, 1c, 2a, 2b, and 2c). Data was gathered to estimate the overall health and productivity of the mitigation bank ecosystem and will give us information on the environmental conditions of the fresh and saltwater marshes surrounding the sites. Fiddler crabs are a keystone species, meaning that the productivity of marsh ecosystems largely depends on their presence. Their burrowing habits allow wetland plant species to have increased surface area and aeration to their roots, and they also act as a source of food for many coastal species including birds (such as herons and egrets), fish (such as Sheepshead and drum), and raccoons. We observed the fiddler crab populations at three separate locations at both our freshwater (1) and saltwater (2) sites. Water samples were also collected and analyzed at each location for parameters such as temperature, salinity, dissolved oxygen (DO), total dissolved solids (TDS), conductivity, pH, nitrates, and nitrites. Crab population health was assessed by species diversity, crab prevalence, carapace size (mm), gender, and age (immature <8mm, mature being >8mm). Our preliminary results supported our hypothesis in that the off-site saltwater locations had larger and healthier populations of fiddler crabs when compared to the freshwater sites located at the mitigation bank. According to our results, salinity at all sites shared a consistent relationship suggesting that every site was likely brackish and not specifically salt or (assumed) freshwater. This may be due to either unexpected saltwater intrusion from rising sea levels, or a lack of previous background research at the mitigation bank. Overall, our fiddler crab abundance was higher in the saltwater sites located farthest away from the mitigation bank, suggesting the saltwater site provides a more suitable environment for the fiddler crabs. The completion of this study allowed us to gain more knowledge on the health of this specific wetlands area of Glynn County. Our findings tell us that the ecosystem of the freshwater marsh sites at the mitigation bank are not as productive as other areas of the marsh, potentially due to past human disturbances.

## Trawl to Trash Outreach Internship with UGA MAREX

**Annmarie Johnson**
College of Coastal Georgia, Department of Natural Sciences

I participated in an internship with the University of Georgia Marine Extension and Georgia Sea Grant, Trawl to Trash Outreach program. This internship involved providing educational programs about marine debris at local Boys and Girls Clubs and summer camps in coastal counties. These programs were designed to engage underrepresented communities in Marine Science, Technology, Engineering, Art and Mathematics (STEAM) education and stewardship activities. The goal was to teach about the negative impacts of marine debris and encourage youth to take part in stewardship activities that directly connect individuals to the coastal zone and marine environment. Other duties included working with marine debris community scientists to conduct monthly marine debris surveys, implementing marine debris programs for the onsite summer camps, and community outreach efforts. I learned many different specimen collection techniques, as well as field techniques, and how to be patient while working with kids. The internship advanced my professional development by giving me practice communicating about marine science and developing educational programs.

## Maritime Grassland Ecology Research Internship on Little St. Simons Island

**Christine Lubin**
College of Coastal Georgia, Department of Natural Sciences

Over the summer of 2022, I participated as an intern in maritime grassland ecology research on Little St. Simons Island, led by University of Georgia graduate student Sara Meissner. The goals of the project were to survey the grasslands on the island and determine if current management methods (burning and mowing) are successful by measuring the amount of regrowth and characterizing the plant and insect communities as indicators of grassland health. Some of my internship responsibilities were collecting soil samples, identifying plant and insect species in the field, transporting and assembling equipment, and helping map the tracts that were being surveyed. From this experience I was able to become more familiar with field work procedures such as using transects and learn more about the rare maritime grassland environment and the plant and insect species that live in that habitat. This knowledge that I have gained will help me develop my future career path as a biologist.

## Precursory Data Collection and Analysis to Determine Oyster Aquaculture Viability at New Hope Research Site

**Michele Mixon, Dalas Roberts, Jessica Harder, Dustin Benton, Megan Mathis,** and Emily Tarsa
College of Coastal Georgia, Department of Natural Sciences

Wetland aquaculture systems are important to filter the soil and water which can help process chemical runoff and build-up from historical pollution in coastal wetlands. The New Hope Research Site has a long history of anthropogenic impacts which has potentially altered the natural ecosystem functions. Further, oyster populations are not present on the site. The purpose of our study was to collect data that can assist with determining viable sites for oyster cultivation. Data were collected from the New Hope Research Site on two occasions at differing tides, in addition to healthy oyster beds at two different sites on Blythe Island. Utilizing the YSI, we collected information on the water temperature, DO ppm,

conductivity, salinity, and pH. We also collected information on the soil conditions, the presence of local wildlife, and the soil's ability to support the substrate necessary for oyster growth. We compared these findings to data points from healthy oyster sites and data from the DNR oyster reclamation site in Glynn County. We also compared our data to Atkinson and Deemy's (2019) habitat suitability model. The New Hope Research Site has significantly lower salinity (>10 ppt), TDS (>10), and very little substrate suitable for oyster growth compared to that of the surrounding waters with healthy oyster growth. We found that creating an aquaculture system that is capable of positively impacting the site will require utilizing oysters, muscles, and/or other mollusks that are capable of surviving in low salinity but are non-invasive species.

## Environmental Technician Internship with GA DNR EPD – Watershed Protection Branch

**Cheyenne Osborne**
College of Coastal Georgia, Department of Natural Sciences

My experience as an Environmental Technician Intern with the Georgia Department of Natural Resources, Environmental Protection Division (GA DNR EPD) far exceeded my expectations. I worked with the Watershed Protection Branch (WPB) which focuses on the safety and cleanliness of Georgia's water resources in support of the EPD's mission to protect and restore Georgia's environment. I primarily worked on the National Lake Assessment in Georgia, which is organized by the Environmental Protection Agency every four years to assess the overall condition of lakes within the United States. With the local EPD WPB, I helped prepare for and conduct water quality data collection at several sites in southeastern Georgia. In addition, compliance specialists introduced me to the inspection process at various municipalities and industries to learn the requirements for the associated environmental regulatory programs. These projects all showed me the concern of the public for the quality of local water sources and the importance of communication with the public to carry out the EPD's mission. Overall, this internship has given me key skills to take into my career in coastal ecology and environmental conservation.

## Effects of Prescribed Fire on Small Mammals in a Maritime Slash Pine Forest on Jekyll Island, Georgia

**Cheyenne Osborne, Sydney Pazdalski, Caroline Singleton, Malique Brinson**, and C. Tate Holbrook
College of Coastal Georgia, Department of Natural Sciences

Maritime slash pine forests on Jekyll Island are threatened by overgrowth of vegetation. Prescribed fire is being tested as a management solution to thin forests, promote new growth of native plant species, decrease the risk of dangerous wildfires, and improve habitat for small mammals. This study assessed the abundance and diversity of small mammals in a maritime slash pine forest on Jekyll Island before and after controlled burning. We conducted post-burn surveys of small mammal populations at six sites over four days and compared our results to previously collected pre-burn and recently-burned data. Game cameras and PVC pipes containing peanut butter and vanilla extract were placed at each site. We identified and counted small mammals from the photographs. Our preliminary results indicate that small mammal species richness, overall abundance, and cotton mouse abundance all increased after the forest was burned. This finding suggests that prescribed fire may have a positive effect on small mammal communities in maritime slash pine forest ecosystems.

## 3-D Fence Diagram of Clark Quarry Shows Depositional History and Fluvial Deposition Linked to Fossil Prevalence, Princess Anne Backbarrier Reworked in Late-Pleistocene

**Nikki Patton,** Felicity Wasylk, and Robin McLachlan
College of Coastal Georgia, Department of Natural Sciences

Clark Quarry in Glynn County, GA is a paleontological site that holds megafauna of the Late-Pleistocene era. Clark Quarry is currently positioned 15 km west of the Atlantic coast and lies within the Princess Anne Terrace, a 100 - 80 ka paleobarrier-island complex. Investigation of the thickness of several stratigraphic layers indicates that the sediment and fossils were deposited in a riverine environment including both channels and floodplain. In the field, depth measurements and sediment samples of stratigraphic layer boundaries were collected, and the presence of marine and terrestrial fossils was noted and collected while at the location. Textures of sediment express change in the depositional layering from marine to terrestrial. The illustration software Inkscape was used to develop a fence diagram that displays the geometry of each layer. The layer geometry and fossil distribution provide evidence of the paleo-flow dynamics and layout of the paleo-environment when deposited. We conclude that terrestrial deposits currently cover reworked fluvial and marine layers deposited relatively quickly in the Late-Pleistocene. In addition, our results can inform decisions on the location of future fossil sites.

## Marine Fisheries Internship with Georgia Department of Natural Resources

**Kirsten Pope**
College of Coastal Georgia, Department of Natural Sciences

During the summer of 2022, I interned with the Georgia Department of Natural Resources Coastal Resources Division as a Marine Technician. We performed ecological monitoring along the Georgia coast at 36 different sites a month. The purpose of our project was to monitor species numbers to ensure that they are not being overharvested. Some of the species I was specifically in charge of included white, brown, and pink shrimp, blue crabs and horseshoe crabs. I monitored these species by taking direct measurements checking for overall health of the organisms including reproductive status and any diseases. This experience allowed me to get a general basis of fieldwork and what it is like, and I now want to explore further in marine fisheries management.

## Rapid Fluvial Deposition Event of the Pleistocene Era on the Coast of Southern Georgia

**Katie Richardson**, Abigail Rice, Sarah Tarajos, Thomas Sparks, Robin McLachlan, Alfred Mead, David Patterson, and Joshua Clark
College of Coastal Georgia, Department of Natural Sciences

Clark Quarry is a paleontological excavation site located within an ancient fluvial environment of modern day Brunswick, Georgia. During the late Pleistocene, this site experienced periods of sea-level fluctuation and river system changes. The dynamic fluvial environment now hosts a variety of well-preserved late Pleistocene era fossils, ranging from small fluvial and marine shells to large terrestrial vertebrates such as mammoths. The use of Total Station technology and the collection of sediment samples were critical in determining if the Unit 4 strata layer was deposited in one depositional event or over an extended period of time. During the study, a Total Station was used to determine the precise

relative location of stratigraphic layer boundaries and the fossils lying within them. Sediment samples were collected, dried, sieved, and evaluated to predict the flow energy present during deposition. Compiled data indicate that during the time of deposition the area was filled with fluvial channels of varying size, suggesting a braided system. Depositional thresholds for the observed sediment grain-size distribution 125µm indicate that a majority of sediment would have been deposited in a low energy flow system 0.1 – 1 m/s. The data collected from this study suggests that sediment was deposited quickly in this area, but it was unlikely to have been deposited in one depositional event.

## Antimicrobial Effects of Spices and Essential Oils

**Brianna Sparks** and Jennifer Hatchel
College of Coastal Georgia, Department of Natural Sciences

Herbs and essentials have been shown to have many benefits with their increasing popularity. While they have been used for dating back thousands of years, people are still searching for natural alternatives for chemically produced items. This study focused on the effects of 5 different spices and essential oils on 3 strains of bacteria obtained from swabs on various parts of the body. The swabs went through various biochemical testing to determine the unknowns being worked with and were identified as Staphylococcus aureus, Staphylococcus epidermidis, and Klebsiella pneumoniae. The spices studied were cinnamon, turmeric, garlic, thyme, and cloves. These were turned into aqueous, ethanol and glycerin extracts. The essential oils observed were peppermint, tea tree, lavender, lemon, and eucalyptus. They were used at full concentration, 0.5 dilution and 0.25 dilution. Disk Diffusion methods were the best way to test these treatments against the microbes. The level of antimicrobial properties was based on the measurements of the zones of inhibition present after the incubation period. Preliminary results showed that cloves had the highest zones of inhibition against all three bacterial species, regardless of extract type. Lavender was the essential oil with the highest inhibitory zones, with tea tree oil closely behind it. Each spice and essential oil showed zones of inhibition. This experiment was triplicated for consistency. Based on previous literature, each spice and essential oils have main compounds that contributed to their bacterial inhibition. These compounds are believed to destroy the bacterial cell wall and their genetic make-up, creating inhibition.

## Determining the Impact of Sediment Properties on Rates of Geomorphic Change: Little Cumberland Island, GA

**Jonathan Warehime** and Robin McLachlan
College of Coastal Georgia, Department of Natural Sciences

Residents of Little Cumberland Island, GA have witnessed dynamic beach morphology changes over the past several decades which threatens property and habitats. Most sections of the beach are eroding rapidly (5m/year), but others have visible accretion and prograding dune systems. To determine modern rates of erosion and accretion, cross-shore elevation surveys were conducted every 1-2 months from September 2022 to January 2023. To determine the impact of sediment composition and organic matter content on erosion rates, surface sediment samples were collected along the transects. Portions of samples were weighed and burned in a muffle furnace to calculate the mass percent of volatile organic compounds. These compounds are indicative of vegetation which could hinder sediment erosion. Quantifying the relationship between organic matter content and erosion rates can aid in future

projections of island morphology when considered with the impacts of sea-level rise, saltwater intrusion, and the resulting decline in vegetation.

## Seed Viability of Georgia Native Plant Species

**Gabi Welch, Benjamin Angalet, Sage Christman**, and C. Tate Holbrook
College of Coastal Georgia, Department of Natural Sciences

The plants and animals of coastal Georgia ecosystems are intricately connected. Native plant species provide important cover and/or food sources for native animals of conservation concern, such as the gopher tortoise, eastern diamondback rattlesnake, and insect pollinators. To help preserve our natural communities, we partnered with the Georgia Department of Natural Resources (GADNR) Wildlife Resources Division to determine the viability of seeds that may be used to restore native plant cover. The GADNR provided us with seeds from two plant species, *Asclepias humistrata* (sandhill milkweed) and *Carphephorus corymbosus* (Florida paintbrush), that had been previously collected and stored over varying lengths of time. Seed viability was tested using a tetrazolium chloride (TZ) test, in which living mitochondrial cells within the embryo stain red in the presence of tetrazolium. *Asclepias humistrata* exhibited poorer viability the longer seeds were kept in storage. *Carphephorus corymbosus* showed relatively low but consistent seed viabilities over a three-year storage period. Further testing of additional storage times and plant species would help optimize seed storage efficiency to aid in the replanting of native vegetation that animals depend on for survival. Methods regarding tetrazolium administration, embryo cutting, and seed selection should be evaluated to improve future studies.

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**Community Partners and Exhibitors:**

4-H Tidelands Center
Center for a Sustainable Coast
Coastal WildScapes
Georgia Department of Natural Resources Coastal Resources Division
Georgia Department of Natural Resources Environmental Protection Division
Georgia Department of Natural Resources Wildlife Resources Division
Georgia Sea Turtle Center
Glynn Environmental Coalition
Jekyll Island Authority
Keep Golden Isles Beautiful
Little Cumberland Island
Little St. Simons Island Center for Coastal Conservation
Manomet
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**Symposium Organizers:**

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