

# Advancing Coastal Resilience in Mississippi Defense Communities

Sea Grant/SERPPAS Workshop



*Photos: Michelle Covi, Keesler AFB/public domain*

**USM Marine Education Center**  
Ocean Springs, MS  
February 23, 2023

## WHAT IS SERPPAS?

The Southeast Regional Partnership for Planning and Sustainability (SERPPAS), established in 2005, is a unique six-state partnership among Alabama, Florida, Georgia, Mississippi, North Carolina and South Carolina that promotes collaborative decision-making to support the conservation and resilience of national defense, natural resources, working lands and communities in the Southeast US. SERPPAS has five focus areas: sentinel landscapes in the southeast; at-risk, threatened and endangered species; southeast prescribed fire initiative; **coastal resilience and regional adaptation**; and energy development and siting. [serppas.org](http://serppas.org)

## WHAT IS SEA GRANT?

Sea Grant is a Federal-University partnership program established by Congress in 1966 between the National Oceanic and Atmospheric Administration (NOAA) and 34 university-based programs in every coastal state, Puerto Rico and Guam. Sea Grant's mission is to enhance the use and conservation of coastal, marine and Great Lakes resources to create a strong and sustainable economy, a healthy environment and inclusive communities. Sea Grant supports communities through research, extension and education in its four focus areas of healthy coastal ecosystems, **resilient communities and economies**, sustainable fisheries and aquaculture, and environmental literacy and workforce development.

The **Mississippi-Alabama Sea Grant Consortium (MASGC)**, members include Auburn University, Dauphin Island Sea Lab, Jackson State University, Mississippi State University, The University of Alabama, The University of Alabama at Birmingham, The University of Mississippi, The University of Southern Mississippi and the University of South Alabama. The mission of MASGC is to provide integrated university- and college-based research, communications, education, extension and legal programs to coastal communities that lead to the responsible use of ocean and coastal resources in Alabama and Mississippi and the Gulf of Mexico through informed personal, policy and management decisions. [masgc.org](http://masgc.org)

***Military installation resilience** is defined as “the capability of a military installation to avoid, prepare for, minimize the effect of, adapt to, and recover from extreme weather events, or from anticipated or unanticipated changes in environmental conditions, that do, or have the potential to, adversely affect the military installation or essential transportation, logistical, or other necessary resources outside of the military installation that are necessary in order to maintain, improve, or rapidly reestablish installation mission assurance and mission-essential functions” (U. S. Code [10 USC § 101\(e\)\(8\)](#)).*

## ACKNOWLEDGEMENTS

The collaborative workshop was made possible with support from SERPPAS,, UGA Marine Extension and Georgia Sea Grant program, and hosted by Mississippi-Alabama Sea Grant Consortium. The planning team included Michelle Covi, Addie Thornton, Hannah Sodolak, Eric Sparks, Tracie Sempier, Nina Woodard and Rhonda Price. The report was written by Michelle Covi and reviewed by the planning team.

Comments/questions? contact Michelle Covi at [mcovi@uga.edu](mailto:mcovi@uga.edu).

## MEETING PURPOSE

Since 2018, the Southeast Regional Partnership for Planning and Sustainability (SERPPAS) has partnered with University of Georgia Marine Extension and Georgia Sea Grant to nurture mutually beneficial connections between the Department of Defense, federal agencies, state agencies and other partners to facilitate climate resilient action in defense communities, those areas associated with military installations. In 2019, the Georgia Sea Grant Law Program led a workshop to explore the challenges and opportunities of collaboration between SERPPAS and Sea Grant. One of the follow-on efforts was successful application to the National Sea Grant Program for a Coastal Resilience Department of Defense (DoD) Liaison with funding matched by the DoD Readiness and Environmental Protection Integration (REPI) program.

In 2022, the Sea Grant Coastal Resilience DoD Liaison, also the lead for the SERPPAS Coastal Resilience and Regional Adaptation Work Group (CRRWG) collaborated with the SERPPAS coordinator and facilitator to plan and host a second workshop, *Advancing Coastal Resilience in the Southeast Defense Communities* in South Carolina. Representative from Mississippi could not attend that workshop and suggested that a regional workshop in coastal Mississippi might be successful. In late 2022, a planning team was formed that included the Liaison, the SERPPAS coordinator, members of Mississippi- Alabama Sea Grant Consortium (MASGC)'s resilience team, and the Director of Restoration and Resiliency for the Mississippi State Department of Marine Resources.

Over 30 people attended the workshop which was hosted by MASGC at the University of Southern Mississippi Marine Education Center in Gulf Springs on February 23, 2023. In addition to Sea Grant and SERPPAS, participants represented state, regional and local governments, military installations, federal agencies and The Nature Conservancy, as well as funders from DoD.

## THE MEETING OBJECTIVES WERE TO:

- Build connections between Sea Grant, SERPPAS, military installations, state and local government, NGO, natural resources, and other climate resilience partners in Mississippi.
- Create a shared understanding of military priorities for climate/coastal resilience and community challenges for resilience along the coastal region.
- Provide successful project examples that demonstrate equitable and effective community engagement, a comprehensive planning approach and the use of natural infrastructure for coastal resilience.
- Set up for success with tools: funding, assistance, guidance for use of nature-based solutions and engagement processes for advancing coastal resilience in defense communities.

The planning team identified local participants to be invited including coastal Mississippi installation contacts. The team used their experience of Mississippi coastal climate resilience projects at the federal, state or local level to determine local speakers and invitees. Both installations in the coastal region of Mississippi, Keesler Air Force Base and NCBC Gulfport were represented as well as representatives from NASA Stennis. The list of participants is in the [Appendix](#).

## SUMMARY

The [agenda](#) for the one-day meeting included a welcome and introductions around the room, a lunch keynote from the Sustainability Director of NASA Stennis, two informational sessions and two breakout sessions.

The first informational session was designed to introduce participants who were not familiar with previous coastal climate resilience efforts in Mississippi to the breadth of work that is currently being done with a few in-depth examples that pertain to local military installation concerns.

Ms. Rhonda Price, Director of the Office of Coastal Restoration and Resiliency for the Mississippi Department of Marine Resources, spoke about the mission of her office and their goals which broadly “build the capacity of state and local governments to better manage and protect coastal communities and marine resources in Mississippi.” Among the programs that she highlighted in her presentation were their coastal restoration coordination team, their Green infrastructure Toolbox, leadership in the Gulf of Mexico Alliance, and the Gulf Star program, which builds partnerships across sectors.

Ms. Nina Woodard, Habitat Resilience Specialist with Mississippi-Alabama Sea Grant Consortium (MASGC) and PLACE-SLR (Program for Local Adaptation to Climate Effects-Sea Level Rise), spoke about a variety of programs that their team works on. One area of focus for MASGC is Resilient Neighborhoods and Residents. Within this focus area are tools, such as Gulf Tree, a decision-support search engine that provides guidance to help users find the right climate tool from basic to advanced. MASGC also has a suite of resilience self-assessment tools for sectors such as communities, businesses, and ports, that are online or in print. Ms. Woodard described in more detail a project designed to bring nature-based approaches to regional stormwater management in Ocean Springs which includes a feasibility assessment to test whether the proposed solution will be both effective and accepted by the community. She also spoke about a project to analyze the costs and benefits of a living shoreline that was implemented in 2019, in which they found a 6.04 cost to benefit ratio over a 60-year period, even if the cost of initial implementation is 3.25 times that of a bulkhead, the conventional solution.

Finally, Dr. David Perkes of the Mississippi State University Gulf Coast Community Design Studio spoke about his program’s efforts in community planning, housing and redevelopment, community engaged watershed planning, environmental education and coastal resilience and environmental restoration. He has focused on the intercity waterways in Biloxi -- the bayous along the Back Bay -- and found that the flood zone expanded after Hurricane Katrina. In order to mitigate flooding, in many cases, the approach of straightening and hardening the waterways has resulted in more sediment downstream and greater need to dredge. A nature -based approach to restore the Bayous and use bioswales has multiple benefits to better addresses flood and includes a filter zone. He works with children to plant in the zone and to better understand the importance of clean water.

### Resources:

[Office of Restoration and Resiliency, Mississippi Department of Marine Resources](#)  
[Mississippi Alabama Sea Grant Consortium/PLACE SLR](#)  
<https://cesamusace.maps.arcgis.com/apps/MapSeries/index.html?appid=ea29cd4e1f3b432e8c520df3fb7a9f8b>

## Community Design Studio

The second informational session was in the afternoon and focused on Department of Defense-supported partnerships and funding opportunities to advance climate resilience in coastal defense communities.

The first presentation was from Ms. Patricia Gray, program manager for the Installation Resilience program in the Office of Defense Community Cooperation (OLDCC). She spoke about the mission, authority and programs of the OLDCC and how the office assists state and local governments with planning and projects that will maintain or improve military installation and mission resilience. She gave a brief overview of the many programs supported by OLDCC, but focused on the Installation Resilience (IR) program and details about grant goals and requirements including 10% non-federal match, and a flexible approach to scoping a project depending on the resilience threats, and can include multiple issues. Looking ahead, while they currently do not have authority for construction in the IR program, the Defense Community Infrastructure Pilot (DCIP) program can fund construction if a project is “shovel-ready.” There is a yearly call for proposals for installations, but communities that want to apply for this funding can reach out to OLDCC anytime.

Ms. Elizabeth Kendrick spoke about the Readiness and Environmental Protection Integration (REPI) program which focuses on encroachment threats outside on installations, such as noise complaints and endangered species concerns. In 2019, REPI received the authority to address climate change hazards to increase military installation resilience. REPI resilience projects focus on natural infrastructure and can serve as a non-federal match for some other federal programs, such as FEMA BRIC that also fund climate resilience projects in communities. REPI funds partnership projects through REPI Challenge, National Coastal Resilience Fund (NCRF) and the America the Beautiful (ATB) Challenge. Ms. Kendrick provided key take-aways and lessons learned from the first round of funding for NCRF and ATB in 2022 that prospective applicants can use for their 2023 applications.

Dr. Eric Sparks, Mississippi State University Coastal and Marine Extension program and Mississippi Alabama Sea Grant Consortium, talked about his program’s work to support coastal resilience, prevent shoreline erosion and restore estuarine ecosystems through the use of living shorelines. He demonstrated the benefits of these shoreline restoration techniques, particularly in contrast to hardened shorelines, which is the majority of the Back Bay, MS. Cost-benefit analysis have supported living shorelines as a better investment long-term, although initial costs of installation are greater than the alternatives. Dr. Sparks highlighted a new project recently awarded by the National Coastal Resilience Fund for a living shoreline/breakwater/marsh restoration project to protect Keesler Air Force Base and adjacent properties along the Back Bay in Biloxi.

### Resources

[Office of Local Defense Community Cooperation \(OLDCC\)](#)

[Climate Resilience Partnership Opportunities](#)

[Living Shoreline Restoration in Back Bay to Enhance Community and Military Resilience](#)

### Lunch Keynote

[2022 Stennis Space Center Sustainability Report and Future Plan](#)

Mr. Alvin Askew, Sustainability Team Lead



# BREAKOUTS

The [agenda](#) included two sessions that allowed for small group discussion and brainstorming. The first breakout was 45 minutes long and devoted to exploring the risks and threats to Mississippi coastal communities and possible solutions.

## Risks/Threat/Issues

- Flooding
- Erosion
- Water quality – alga blooms, vibrio
- Severe storms
- Habitat loss
- Saltwater intrusion
- Contamination
- Energy vulnerability
- Development – not considering costs
- Freshwater diversion
- Invasive species
- Hurricane's extreme weather
- SLR
- Flooding from stormwater (property damage)
- Chronic flooding + regular now
- Maintenance of stormwater infrastructure
- Greater number of houses in flood zones (community and economic threat)
- Greater wind damage (building stronger to higher studs)
- How we develop moving forward (to be least impactful)
- Staff turnover
- Constant re-education
- Gaps in watershed management planning
- State funding gap for this planning
- Wool market range (Navy) – noise reduction – perimeter vegetation
- Canal road (Navy +GPT) Culvert wet, 28<sup>th</sup> street
- Hazard mitigation planning
- Conservation easements (saloons pearl)
- Wilson Slough – water diversity
- Permit holder issues
- Private property / base drainage
- Repaving Pass Rd (Navy)
  - Planning commission checking statutes
- Proactive vs. reactive

## SOLUTIONS

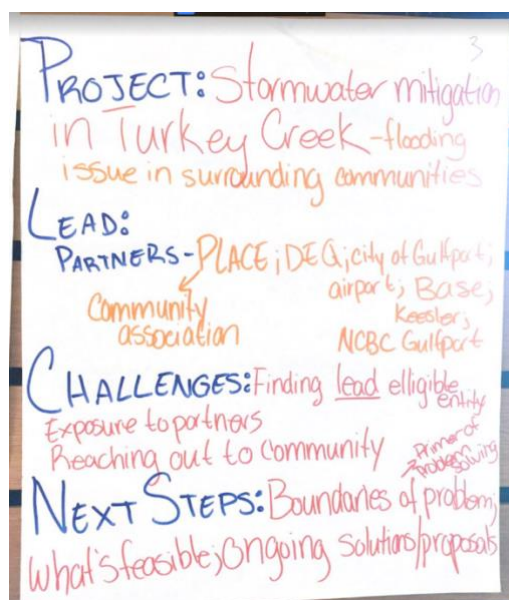
- Fortified – insurance incentives
  - E.g.: Coastal Code supplement in coastal AL adopted by municipalities
  - Lender driven incentives before they develop funds
- Greater enforcement of building codes (requires capacity at local level)
- Anyone constructing over 5 acres -large acre permit for stormwater management (needs to be enforced)
- Inspectors required to be certified by state opportunity to train
  - Developers to understand conservation development to serve as a buffer
- Education at all levels (state, local) to make people part of the process
  - Issues are of cc are no longer a future problem (need people to know this)
- Pair funding to get funding for priority projects (not have to wait for MDEQ)
- More science communication (not funded well)
  - Connecting success stories in a more holistic way
  - Using visuals to help tell the story
  - Reintroduced over and over
- Expansion of successful projects – increase capacity for this
  - E.g.: ECDS projects but on a larger scale
- Reimagining what the coast could look like using visualizations to help people see big picture
  - Timing is right for large scale changes due to funding in Gulf

The second small group breakout session was 90 minutes and focused on developing projects ideas to address the threats and issues identified in the first breakout and expand on the ideas for solutions that were raised.

Two groups identified Turkey Creek flooding issues in their discussion:

Project	Turkey Creek Comprehensive Stormwater Study
Lead	City of Gulfport
Partners	Harrison County, NCBC, TNC, University
Challenges	What are design options? Defining scope? Identifying key people.
Next Steps	Submit OLDCC Service nomination, make contacts to establish partners
Funding	OLDCC

Project	Stormwater Mitigation in Turkey Creek – flooding issue in surrounding communities
Lead	
Partners	PLACE and community association, DEQ, City of Gulfport, airport, Keesler, NCBC Gulfport
Challenges	Finding lead eligible entity, exposure to partners, reaching out to community.
Next Steps	Boundaries of problems, primer of problem solving, what's feasible, ongoing solutions and proposals.



Photos: Hannah Sodolak

Other projects:

Project	Division Street Flooding – Bayou Restoration
Lead	MSU – Gulf Coast comm design studio
Partners	Keesler AFB, City of Biloxi, TNC
Challenges	EJ area, dealing with community members impacted, capacity issues, needed a sub watershed management plan, BASH, needs redesign – what do we do in the interim? How do you design on and off base?

Next Steps	Connect with MSU – define project, maybe plug into current effort
Funding	REPI challenge/ NFWF 5 Star + RESTORE? DCIP?

Project	613&63 south end of bridge, erosion, potentially living shoreline project, evacuation route/ materials transport
Lead	
Partners	Keesler have a number of people living/working that would use this transportation route, Ingalls
Challenges	Linking to funding relevant to the base, Pascagoula housing-lakeside housing navy personnel that oversee contracts for construction
Next Steps	
Funding	GOMESA, Tidelands

Project	Conservation assessment (NASA+ Navy) Pearl River Gravel pits
Lead	Land trust? – Pearl river keeper,
Partners	Hancock County / Tax Assessment, DMR Coastal Preserves, SOS, Planning commission (Assessment phase), Robert Smith (Wildlife MS)
Challenges	Finding willing landowners, perception and opinion, defining project area
Next Steps	Develop assessment + phrased approach, ID Mission Impacts + restrictions, find funding, locate large parcels, ID existing plans, ID BMPs, Look up Evans tool

Project	NBS on industrial properties
Lead	
Partners	Ingalls, TNC, Grand Bay NERR, Chevron
Challenges	Hard to find funding to work on private property, property owners are worried you would turn into a wetland that they cannot develop
Next Steps	

Project	Stormwater management education (interpret positive messages that show the investment) helping people understand their role, happening as part of other projects, but not the main focus
Lead	Base personnel, city government or county, depends on audience
Methods	Social media, PSAs, TV/media
Challenges	Multiple audiences, older audiences may not be willing to change
Next Steps/Funding	REPI – eligible for planning components, NCRF could then acquire property (eligible), Keesler outfalls causing silting, understand how this impacts residents (dredge)?

## CONCLUSION

To wrap up the day, workshop organizers and facilitators took a moment to thank all the speakers and workshop participants for their time. All workshop participants are invited to continue participation in climate resilience collaboration through the Coastal Resilience and Regional Adaptation work Group of SERPPAS. The group has a monthly call, which is an opportunity to learn from others and meet partners and colleagues from across the region.



# APPENDIX



## Advancing Coastal Resilience in Mississippi Defense Communities

**February 23, 2023**

USM Marine Education Center  
101 Sweetbay Drive, Ocean Springs, MS 39564

**Meeting Purpose:** *To foster and support military-community partnerships focused on building coastal resilience to support military readiness and the wellbeing of the community.*

### Meeting Objectives

- Build connections between Sea Grant, SERPPAS, military installations, state and local government, NGO, science and natural resource agencies, and other climate resilience partners in Mississippi.
- Create a shared understanding of military priorities for climate/coastal resilience and community challenges for resilience along the coastal region.
- Provide project examples from the region that demonstrate effective community engagement, a comprehensive planning approach and the use of natural infrastructure for coastal resilience.
- Set up for success with tools: funding, assistance, guidance for use of nature-based solutions and engagement processes for advancing coastal resilience in defense communities.

### Thursday, February 23, 2023

8:30 p.m.	Registration	
9 a.m.	Welcome and Introductions	<p><b>Michelle Covi</b>, Coastal Resilience DoD Liaison, <i>UGA Marine Extension and GA Sea Grant</i></p> <p><b>Hannah Sodolak</b>, SERPPAS Administrative Coordinator, <i>Texas A&amp;M Natural Resources Institute</i></p> <p><b>Tracie Sempier</b>, Coastal Resilience Engagement Specialist, <i>Mississippi Alabama Sea Grant Consortium</i></p>
9:20 a.m.	Introduction to the Partners	<i>Purpose: To introduce the people, installations and organizations that are participating in the workshop.</i>
10 a.m.	Mississippi Coastal Resilience Projects Overview	<p><b>Rhonda Price</b>, Director, <a href="#">Office of Restoration and Resiliency</a>, <a href="#">Mississippi Department of Marine Resources</a></p> <p><b>Nina Woodward</b>, Habitat Resilience Specialist, <a href="#">Mississippi Alabama Sea Grant Consortium/PLACE SLR</a></p> <p><b>David Perkes</b>, Director, <a href="#">Community Design Studio</a> <i>Mississippi State University</i></p>



11 a.m.	Break and Break out discussion	<i><u>Purpose:</u> To begin thinking about climate resilience needs and challenges across the Mississippi coast.</i>
11:45 a.m.	Idea Exchange	<i><u>Purpose:</u> To share initial thoughts across break out groups and start to identify shared needs and challenges.</i>
12 p.m.	Lunch	Keynote speaker Alvin Askew , <a href="#">NASA Stennis Space Center Sustainability</a> Team Lead
1 p.m.	DoD Partnership and Funding Opportunities	<i><u>Purpose:</u> Overview climate resilience planning and project funding opportunities with examples from the Gulf region.</i>  Patricia Gray, Installation Resilience Program, <a href="#">Office of Local Defense Community Cooperation (OLDCC)</a>  Elizabeth Kendrick, <a href="#">Climate Resilience Partnership Opportunities, Readiness and Environmental Protection Integration (REPI)</a>  Eric Sparks, <a href="#">Living Shoreline Restoration in Back Bay to Enhance Community and Military Resilience</a> , <a href="#">Mississippi Alabama Sea Grant Consortium/ Mississippi State University Coastal Research and Extension</a>
2:30 p.m.	Project generation break out session	<i><u>Purpose:</u> Groups identify and discuss opportunities for partnerships and ideas for projects and implementation.</i>
4:00 p. m.	Idea Exchange	<i><u>Purpose:</u> To share the project ideas developed in each group and allow for feedback and insights from the other participants and discuss ways to support projects.</i>
4:50 p.m.	Adjourn	Closing Remarks and Next Steps

#### Driving directions

Use a GPS system (Google maps) with [101 Sweet Bay Drive, Ocean Springs, MS](#)

From US 90/Bienville Blvd in Ocean Springs, turn right on Park Rd. after 1.3 miles turn left on Laurel Oak Dr. which ends at the parking lot to the GCRL Marine Education Center.

Reduce waste: please bring a refillable water bottle and/or hot beverage mug.

## PARTICIPANTS

Noah	Akozbe	Environmental Manager	MS ANG CRTC	koray.akozbek@us.af.mil
Becky	Allee	Senior Scientist	NOAA Office for Coastal Management	becky.allee@noaa.gov
Alvin	Askew	Sustainability Team Lead	NASA	jeffrey.a.askew@nasa.gov
Andrew	Barrett	Marine Scientist	Mississippi Department of Marine Resources	andrew.barret@dmr.ms.gov
Patrick	Biber	Associate Professor	University of Southern Mississippi	patrick.biber@usm.edu
Verónica	Brieno Rankin	81st Civil Engineer Squadron Installation Management Flight Chief	Keesler AFB Installation Management Flight Chief	veronica.brieno_rankin@us.af.mil
Justin	Brooks	Director of Government Relations	The Nature Conservancy	justin.brooks@tnc.org
Michelle	Covi	Coastal Resilience DoD Liaison	University of Georgia Marine Extension and Georgia Sea Grant	mcovi@uga.edu
Tony	Crowe	Natural Resources Manager	U.S. Naval Facilities Engineering Systems Command - Southeast	robert.a.crowe12.civ@us.navy.mil
Stephen	Deal	Extension Specialist, Land Use Planning	MS-AL Sea Grant	scdeal@olemiss.edu
Jonathan	Feldman	REPI Program Manager	Air Force	Jonathan.feldman@us.af.mil
Patricia	Gray	Project Manager	Office of Local Defense Community Cooperation (OLDCC)	patricia.h.gray6.civ@mail.mil
Patric	Harper	Coastal Program Coordinator	USFWS	patric_harper@fws.gov
Ronald	Jenkins	Community Planning Liaison Officer	Naval Construction Battalion Center Gulfport, MS	ronald.j.jenkins.civ@us.navy.mil
Thomas	Jones	Installation Environmental Program Director	NAVFAC SE	thomas.k.jones44.civ@us.navy.mil
Elizabeth	Kendrick	Senior Consultant	Booz Allen Hamilton	Kendrick_Elizabeth@bah.com
Matthew	Lambert	Lead Community Planner	Air Force Natural Disaster Recovery	matthew.lambert.4@us.af.mil

Jeff	Loftus	Community Planning Manager	Gulf Regional planning Commission	jol@grpc.com
Tom	Mohrman	Director of Mississippi Marine Programs	The Nature Conservancy	tmohrman@tnc.org
Christina	Mohrman	Program Manager/Science Communication Manager	Gulf of Mexico Alliance	christina.mohrman@gomxa.org
Laura	Moncrief	Program Specialist IV	Mississippi Department of Marine Resources	laura.moncrief@dmr.ms.gov
Lisa	Noble	Environmental Installation Restoration Program Manager	Naval Construction Battalion Center, Gulfport	lisa.l.noble5@ctr.navy.mil
Garey	Payne	Community Planner	Air Force Civil Engineer Center, Natural Disaster Recovery	garey.payne.2@us.af.mil
David	Perkes	Professor	Mississippi State University	dperkes@gccds.msstate.edu
Tim	Pierce	Chief, Planning & Development	NASA	timothy.i.pierce@nasa.gov
Margo	Posten	Coastal Training Program Coordinator	Grand Bay National Estuarine Research Reserve	margo.posten@dmr.ms.gov
Rhonda	Price	Director OCRR	MDMR	Rhonda.price@dmr.ms.gov
Tracie	Sempier	Coastal Resilience Engagement Specialist	Mississippi-Alabama Sea Grant Consortium	tracie.sempier@usm.edu
Hannah	Sodolak	Administrative Coordinator	Texas A&M Natural Resources Institute/SERPPAS	hannah.sodolak@ag.tamu.edu
Eric	Sparks	Asst. Director for Outreach/ Coastal Ecology Specialist	Mississippi-Alabama Sea Grant Consortium	eric.sparks@msstate.edu
Mary	Walker	Director	Gulf Coast Ecosystem Restoration Council	mary.walker@restorethegulf.gov
Nina	Woodard	Habitat Resilience Specialist	PLACE:SLR/MSU CREC	n.woodard@placeslr.org