

Advancing Coastal Resilience in the Southeast Defense Communities

Sea Grant/SERPPAS Workshop



Four Winds Family Readiness Center

MCRD Parris Island, SC

August 29-30, 2022



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.

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.

ACKNOWLEDGEMENTS

The collaborative workshop was made possible with support from Sea Grant, UGA Marine Extension and Georgia Sea Grant program, and hosted by Marine Corps East/ Marine Corps Recruit Depot Parris Island. This report was written by Michelle Covi, Coastal Resilience DoD Liaison, UGA Marine Extension and Georgia Sea Grant with review and edits by Addie Thornton, Nancy Walters, Cayla Cothron, Renee Collini, and Katie Finegan. Design was provided by Trey Cooper.

If you have comments and questions, contact Michelle Covi at mcovi@uga.edu.

MEETING PURPOSE

In 2019, the Southeast Regional Partnership for Planning and Sustainability (SERPPAS) joined with the Georgia Sea Grant Legal Program at University of Georgia to hold a workshop, *Collaborating toward Coastal Resilience in the Southeast* as an initial effort to explore the challenges and opportunities of collaboration between SERPPAS and Sea Grant and create a link between the programs. The effort was successful in creating a deeper understanding of how coastal resilience is affecting the military installations and the communities that both depend upon and support them. Over the following three years, many of the attendees became involved in the SERPPAS Coastal Resilience and Regional Adaptation Work Group (CRRAWG).

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.

A proposed 2020 follow up Sea Grant/SERPAS workshop was postponed due to the coronavirus pandemic. In 2022, the Sea Grant Coastal Resilience DoD Liaison, now also the lead for the SERPPAS CRRAWG, collaborated with the SERPPAS coordinator and facilitator to plan and host a second workshop, *Advancing Coastal Resilience in the Southeast Defense Communities*, on August 29-30, 2022, at Marine Corp Recruit Depot Parris Island in Beaufort County, South Carolina. Over 45 people attended the workshop from North Carolina, South Carolina, Georgia and Florida. In addition to Sea Grant and SERPPAS, participants represented state, regional and local governments, military installations, and NGOs including The Nature Conservancy, several land trusts as well as funders from DoD and the National Fish and Wildlife Foundation.



Michelle Covi, Coastal Resilience Department of Defense (DoD) Liaison

OBJECTIVES:

- Create a shared understanding of military priorities for climate/coastal resilience and community challenges for resilience along the coast.
- Create place-based teams and provide resources to stimulate project planning and set up for successful and continuing collaborations.
- 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 teams for success with tools: funding, assistance, guidance for use of nature-based solutions and engagement processes for advancing coastal resilience in defense communities.

Four state-based teams were formed that aligned with the Sea Grant programs in North Carolina, South Carolina, Georgia and Florida. These teams also aligned with currently designated and proposed Sentinel Landscapes in each of the four states. The Sentinel Landscapes Partnership is a coalition of federal agencies, state and local governments and non-governmental organizations that works with landowners to advance sustainable land management practices around military installations. Founded by DoD, the U.S. Department of Agriculture and the Department of the Interior, designated Sentinel Landscapes include Eastern North Carolina, Georgia and Northwest Florida. Lowcountry, South Carolina, centered on the Beaufort County area is a proposed Sentinel Landscape.



Arielle Mion, program manager for the National Coastal Resilience Fund (NCRF) at the National Fish and Wildlife Foundation



Joy Brown, South Carolina Marine Program Manager for The Nature Conservancy



Shana Jones, Assistant Director of Strategic Operations and Planning Assistance at UGA Carl Vison Institute of Government

SUMMARY BY TOPIC SESSION

The agenda for the meeting centered around five informational sessions that included presentations and panel discussions with the themes of DoD Climate Adaptation Planning, Military Installation Resilience Review and Planning in the Lowcountry, National Coastal Resilience Fund Projects and Pipelines, REPI Partnership Opportunities and Engaging Communities in Projects.

DOD CLIMATE ADAPTATION PLANNING

The DoD Climate Adaptation Plan (CAP) was presented by Alicia Stenstrom, a member of the Climate Action Team in the Office of the Deputy Assistant Secretary of Defense for Environment and Energy Resilience. She stated that the CAP was developed in response to the fact that DoD is experiencing the impacts of climate change and needs to adapt. DoD is also responding to Executive Orders, such as 14008, Tackling the Climate Crisis at Home and Abroad, and working within the “whole-of-government” approach to both mitigate and adapt to climate change. In addition to the overall DoD CAP, the military departments (Army, Navy, Air Force) are also developing their own strategies or plans to operationalize climate adaptation and mitigation with specific actions.

Stenstrom described the CAP framework with the five major lines of effort and four cross-cutting enablers. Among the lines of effort (LOE) that pertain directly to the workshop were LOE 1- Climate-informed decision-making that underscores so many of the actions in the CAP. Tools such as the DoD climate assessment tool (DCAT) that is being used by installations to plan for climate change and the DoD regionalized sea level rise database (DRSL) which is publicly available. LOE 3- Resilient Built and Natural Infrastructure pertains directly to installation resilience and exposure to coastal hazards. LOE 5- Enhance Adaptation and Resilience Through Collaboration includes the focus area of community resilience, working directly with communities to build shared resilience, enhance shared ecosystems to preserve installation and training lands. Stenstrom also spoke in more detail about the DCAT and how they are looking at adapting for use outside of the fence line.

While the workshop focus was on defense community resilience, to better understand how DoD is preparing installations, Tracey Spencer, Environmental Division Director for Marine Corps Recruit Depot Parris Island, provided a brief presentation about resiliency and sustainment efforts taking place on the installation. Spencer highlighted the substantial investment that the Marine Corps has made in resilience for the power plant and power grid, including a battery storage system for a solar array to allow better power reliability despite weather conditions, the Marines have also improved roads and stormwater culverts to manage flooding in low-lying areas, raised training areas and incorporated the “art of the small” approach by including sustainability and resiliency in every project.

The installation completed a Climate Change Adaptation and Resilience Plan (CCAR) in 2020 that examined sea level rise and storm surge risk. They have focused work on the stabilization of the vulnerable National Historic Landmark area and developed an integrated plan of protection including enhanced shoreline stabilization and strategic hardening. Parris Island has prioritized an approach that emphasizes regional partnerships, incremental steps that balance risk and resources, and data collection to base actions on the best science. During the discussion, Spencer addressed several questions about long range planning and strategic re-location by emphasizing that their approach has been to adapt as well as they can in place given the current guidance and resources available, that the Navy set the guidance and they update their master plan every five years.



Tracey Spencer (right), Environmental Division Director for Marine Corps Recruit Depot Parris Island

The following three sessions focused on DoD funding sources for communities to engage in climate resilience planning and implement projects. Each of these sessions included a speaker from the program funding the program and examples projects, followed by a panel discussion with questions from the moderator and workshop participants.

MILITARY INSTALLATION RESILIENCE REVIEW AND LOWCOUNTRY RESILIENCE PLANNING

Margit Myers, program activity lead for the Installation Resilience program in the Office of Local Defense Community Cooperation (OLDCC) started the session by describing the role of OLDCC, its authorities and mission. Among its activities are community investments in infrastructure and schools as well as community adjustment projects including support for compatible use and community resilience planning. Myers described a typical resilience planning project, the process of developing a scope of work and applying for grant funds. The intension is for the planning process to leverage local, state and federal resources for implementation and be compatible with other programs. She said that there is a growing emphasis and funding directed to resilience and that the applications for compatible use planning (CUP) and installation resilience projects have a rolling deadline.

Stephanie Rossi, Planning Director for the Lowcountry Council of Governments provided an example of a completed military installation resilience review (MIRR), an OLDCC installation resilience project. The Lowcountry MIRR centered on Beaufort County and the two Marine Corps installations in the region- MCAS Beaufort and MCRD Parris Island. The review focused on infrastructure and vulnerabilities related to the most likely hazards and developed a solutions toolkit with both structural and nonstructural recommendations for actions that will increase resilience in the community that are related to the missions of the installations. The MIRR builds from previous planning efforts in hazards mitigation, sea level rise, economics and military-community compatible land use. The MIRR technical advisory team also developed a robust stakeholder engagement process that added additional members as the project developed. Rossi outlined the vulnerability analysis and project prioritization process which divided pilot projects into urban, suburban and rural project types. Each project included potential funding and partnership that would help accelerate the projects. The partnership would potentially apply for a follow-on grant from OLDCC, is working toward Sentinel Landscape designation, and participating in regional projects such as the SERPPAS-led South Atlantic Salt Marsh Initiative and a state-wide resilience plan.

Juliana Smith, long range planner for Beaufort County, Mary Ryan Krieger, community planning liaison officer at MCAS Beaufort, and Kate Schaefer, Director of Land Protection for the Beaufort County Open

Land Trust joined Rossi for a panel discussion. Smith spoke about how Beaufort County is engaged in climate resilience planning and currently conducting a study looking at the impact of sea level rise and higher ground water on rural septic system function. Krieger commented that the MIRR provided an excellent opportunity to the installations to create new partnerships since the scope was outside of the usual encroachment planning. Schaefer said that the new Sentinel Landscape planned for the area will build on these opportunities and will allow the current work in land protection to scale-up to provide resilience through natural infrastructure projects as well as transportation projects. The proposed Lowcountry Sentinel Landscape will border the existing Georgia Sentinel Landscape to protect both sides of the Savannah River, which is also a drinking water source for the region. The Lowcountry Sentinel Landscape also contains half of the salt marsh in the state, which protects the installation and community, and by protecting lands behind the salt marsh, the systems can migrate in response to sea level rise.

Rossi responded to questions about local capacity for implementation by explaining that they are just getting started with that phase and are in the process of figuring that out. Among the lessons learned in the Lowcountry from the MIRR process were to include outreach and funding for that effort in the proposal. She said it is important to be clear in communications with the public, stakeholder and partners about the project scope and process. The panel discussed how to consider time scales when dealing with sea level rise projections for possible long-range planning but concluded that they found shorter time frames more useful for immediate action.

REPI PARTNERSHIPS AND CLIMATE RESILIENCE

Kristin Thomasgard, Director of the Readiness and Environmental Protection Integration (REPI) program, recognized how climate resilience is a growing concern. She explained how REPI supports military installation resilience through its focus on encroachment risks stemming from land use change around installations and how climate resilience has become a growing concern. REPI supports climate resilience exclusively through the development or management of off-base natural infrastructure. In the FY 2023 proposal cycle REPI will support cost-share project proposals nominated by the military services, and the REPI Challenge. In addition, REPI will join NOAA and other partners to fund the National Coastal Resilience Fund, administered by the National Fish and Wildlife Foundation, and works with OLDCC and the Federal Emergency Management Agency FEMA on several of their opportunities. REPI also supports the Sentinel Landscapes Partnership, a collaboration with US Department of Agriculture (USDA) and Department of Interior. Thomasgard highlighted new partnerships REPI has been working on with FEMA and NOAA to advance DoD climate resilience initiatives in defense communities.

Chris Baillie, Eastern North Carolina Sentinel Landscape (ENCSL) Resilience/Climate Adaptation Coordinator, hosted by the North Carolina Coastal Federation, briefed the workshop participants on the history and significance of the ENCSL, its geography and the installations participating. He also spoke about the resilience and climate adaptation-focused projects proposed and underway in their landscape, including living shorelines projects at MCAS Cherry Point, Camp Lejeune, MCAS New River and along access points to the installations. The ENCSL partners are also working on inland flood resilience in the watershed that includes Seymour Johnson Air Force Base. Baillie is developing a climate resilience plan for ENCSL and a framework that would be transferable to other Sentinel Landscapes.

Joy Brown, South Carolina Marine Program Manager for The Nature Conservancy (TNC), provided an overview of the Tyndall Air Force Base coastal resilience project in Panama City, Florida. Tyndall was devastated by Hurricane Michael in October 2018, which destroyed or damaged 100% of the installation assets. In response, TNC spearheaded an effort with private sector partner, Jacobs, to design and fund a series of pilot projects designed to test the efficacy of three nature-based structures, an oyster reef, a living shoreline and a shoreline stabilization. The project partners have used funding from REPI, the RESTORE Act, and the U.S. Fish and Wildlife Service to support data collection, design, permitting and monitoring of the project. Additional applications are pending to fund construction. Brown emphasized the importance of the collaborative team that also includes University of Florida, the Naval Research Lab and Rutgers University.

COASTAL RESILIENCE PROJECTS AND PIPELINES

Arielle Mion, program manager for the National Coastal Resilience Fund (NCRF) at the National Fish and Wildlife Foundation presented information about their funding opportunity, program priorities and connections to DoD to fund defense community projects. The National Coastal Resilience Fund supports nature-based coastal resilience projects that meet the dual benefits of enhancing community resilience to coastal hazards and enhance habitats for fish and wildlife. Successful projects are those that are innovative, sustainable to changing climate conditions, such as sea level rise and transferable in that they could be replicated or scaled throughout a community or the region. Mion described the project pipeline approach that characterizes projects into one of four categories: Community Capacity Building and Planning, Site Assessment and Preliminary Design, Final Design and Permitting, and Restoration Implementation. She also spoke about the partnership with the DoD REPI program, which supported \$15 million of the \$140 million that the fund had available in 2022. Projects that align with NCRF goals and are working with military installations to align with mission readiness goals are eligible for those funds in addition to the regular NCRF funds.

Two examples of funded projects were presented by Ashby Worley, Coastal Climate Adaptation Director for The Nature Conservancy – Georgia, and Tim Day, Deputy Director of the Natural Resources Department for Escambia County, Florida. Worley spoke about the Camden County, Georgia, Resiliency Implementation Workplan developed through a Community Capacity Building and Planning NCRF grant. The plan assessed the coastal hazards vulnerability for the county and through a robust stakeholder engagement process that included Naval Submarine Base Kings Bay, 91 potential project sites were identified. The team then used a project prioritization tool that included eight weighted factors from sea level rise and floodplain vulnerability to species habitat to rank the projects that are now seeking funding for design and implementation. Day presented on the Pensacola Bay Living Shoreline Project, which has received funding from the NCRF to design, permit and implement a large-scale, multi-site living shoreline that would create a 15,000-foot breakwater and 200 acres of marsh and submerged aquatic vegetation habitat. Day outlined the details of the projects including several sites that protect NAS Pensacola. Day addressed questions detailing the beneficial use of dredge material in the project, and how to deal with monitoring projects beyond their grant. Escambia County utilizes partnerships with universities to achieve monitoring goals.

ENGAGING COMMUNITIES IN PLANNING AND PROJECTS

The fourth and final informational session was a panel session moderated by Shana Jones, Assistant Director of Strategic Operations and Planning Assistance at UGA Carl Vison Institute of Government and Director of the Georgia Sea Grant Legal Program. Panelists included Esther Adams, Manager of Strategic Initiatives, Center for Heirs Property Preservation in South Carolina, and Renee Collini, Coastal Climate Resilience Specialist for the Program for Local Adaptation to Climate Effects: Sea-Level Rise (PLACE:SLR with Mississippi State University) and Sea Grant. Adams started the discussion by describing her work with historically underserved African American landowners who have no clear title to their property that has been owned by their family for generations. She described some of the challenges of finding the right contact within the community and gave examples of finding the right approach that is tailored to the community. Collini shared her experiences working with a community in East Biloxi and remarked that there needs to be space and time to build relationships, listen and adapt your process. She emphasized that engagement is a lot of work that is often underestimated, and that stakeholder and participant support is necessary. Both speakers gave specific examples of ways to reach out and find key community leaders such as neighborhood groups, churches, day cares and libraries. Leaders may want to meet you first before they bring you into a community. The speakers noted that these communities are not homogenous, that there are often multiple leaders. Collini talked about translations and how important making sure that outreach is using the language appropriate for the target audience. She even used translation headsets that could translate into two languages simultaneously to make language accessible in some meetings. Adams and Collini described successful projects that they were proud of and, most importantly, found that the community served was empowered by the experience.



Shana Jones (far left); Esther Adams (center), Manager of Strategic Initiatives, Center for Heirs Property Preservation in South Carolina; Renee Collini (right), Coastal Climate Resilience Specialist for the Program for Local Adaptation to Climate Effects: Sea-Level Rise with Mississippi State University and Sea Grant

STATE TEAM BREAKOUTS

The final two hours of the meeting were dedicated to discussions in each of the state teams facilitated by Sea Grant coastal resilience specialists from each of the four states. These discussions were followed by report-outs from each team about one or two projects that they had discussed and were planning to pursue. Teams were provided worksheets and templates to guide their discussion and followed a format of designed to take the group through idea generation, prioritization, and commitment to a project in a short period of time.

NORTH CAROLINA

The North Carolina team was made up by a diverse group that included representatives from Sea Grant, Sentinel Landscape, state and local government, university, and a partner NGO. After reviewing threats and challenges as well as on-going resilience efforts in the region, the group discussed more than 20 ideas and concerns, from failing septic systems to the challenges in coastal forests due to climate change to building community capacity for disaster recovery.

Two projects were further discussed. Project one was a transportation routes study that would examine which routes and which communities are most impacted by flooding. This project would leverage on-going work with NCDOT and look at how connections to installations, and therefore training and operational missions are impacted.

Project two was presented to the group at the report-out and was chosen as the focus of a follow-up effort. This project, “Reimagining local land use plans for community and ecosystem resilience in coordination with military installations” would seek to leverage local comprehensive planning processes to help rural communities think beyond minimum planning requirements from the state, including how climate change will impact land use, economic development, transportation, and other topics addressed in these plans. Goals would include developing a strategic framework for how to exceed minimum planning requirements and integrate resilience into local comprehensive land use plans; incorporating a robust stakeholder engagement process, including local communities, military installation(s), and other local or

regional stakeholders as identified; and developing resources or guidance to inform future planning efforts that can serve as a model for local comprehensive plan updates across rural NC communities, and potentially the Sentinel Landscape. The North Carolina team will engage with the Town of Maysville's 2022-23 comprehensive land use plan process to support the inclusion of resilience and identify "lessons learned" that will serve as the foundation for future project outcomes.

SOUTH CAROLINA

The South Carolina team was large (more than 14 members) and represented Sea Grant, proposed Sentinel Landscape partners, state, regional and local government, several military personnel from two installations, university, and partner NGOs. The group generated many project ideas including living shorelines, evaluation of effectiveness and suitability of use of other natural infrastructure for resilience, rain proofing, ecosystem service evaluation, mapping and addressing problem roads and marsh areas, and creating a regional database of engineers and contractors that have successfully implemented natural infrastructure projects across the state.

Two projects were further developed and presented in the report-out as topics that groups would be continuing to work on in the coming months. Project one was "Sentinel Landscape Implementation Support". They will be collecting letters of support and identifying projects within the landscape as next steps. One of the significant challenges they identified was explaining the concept and benefits of a Sentinel Landscape to their constituents.

The second project that was identified was "Beaufort Needs Assessment and Gap Analysis of Data." Data was defined as real time data for tide, temperature, groundwater and rain. The project is being led by installation representatives and a representative from the City of Beaufort. The team identified a need for more site-specific climate data in areas where the currently modeled data is inaccurate. They would like to fund sensors that would collect rainfall, water level, groundwater and temperature, to allow for the ground truthing of models. As a result, planning would be able to consider locally appropriate information. These sensors might also provide real-time information that could inform emergency management or public works actions by the city and county.

GEORGIA

The Georgia team had representatives from Sea Grant, an installation, local government, university and partner NGOs. The team generated projects ideas for the two major military installations along the coast. The group presented three possible projects for further action and follow-on work. The first project was a Transportation Resiliency Study that could be part of a Military Installation Resilience Review for Fort Stewart and Hunter Army Airfield. The project could be extended to look at other infrastructure such as water/sewer and electrical. Among the challenges were finding the right funding sources and the next step was to start a discussion with OLDCC about the possibility of funding this project.

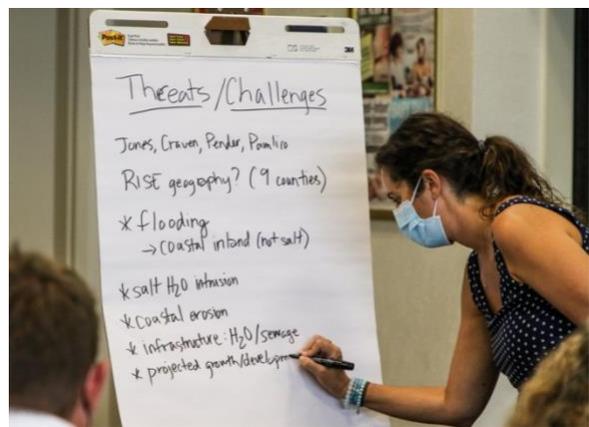
Project two was at the regional level and included the communities around Ft. Stewart, Hunter Army Airfield and Townsend Bombing Range to address the recent overwhelming and rapid population growth the area is experiencing. The project, "Compatible Land Use Project," would align with goals for OLDCC projects and, if there was installation buy-in, it would need to involve a diversity of partners. The next steps identified were to bring installation and community government staff together to define the scope of a potential project and how that would fit into the coastal resilience of the Georgia Sentinel Landscape.

A third project was identified, but not fully scoped to work with Kings Bay and the Camden County communities to advance their coastal resilience implementation plan that was described in an earlier informational session.

FLORIDA

The Florida team focused on the Northwest Florida Sentinel landscape and included representatives from Sea Grant, the NWFL Sentinel Landscape, local and regional government and a partner NGO. The group identified two priority projects that would be led by the Emerald Coast Regional Council and fit in well with the Military Installation Resilience Review that was recently awarded for that region. The first project was “Addressing water quantity issues and stormwater,” a comprehensive approach to addressing both upstream and downstream by incentivizing upstream Low Impact Development (LID) upstream and making space for future flood streams through land acquisition downstream. Both approaches would look for opportunities to retain stormwater to allow water to infiltrate. The downstream approach could target areas of known flooding and including military housing. Partners and funding including OLDCC, FEMA BRIC and RESTORE were identified. Challenges identified included the need for data to demonstrate the benefit of the approach and the need for marketing to justify the need to the public in order to ensure the political will for the changes needed. The next step is to assemble stakeholders to make sure that this approach is included in the MIRR.

Project two was identified as shoreline protection on the State Highway leading to Eglin AFB. This project is based on an example from an on-going project on Hwy 98 in the adjacent region near Tyndall AFB. An extensive list of partners was developed, and funding was identified from FDOT, RESTORE, and REPI Challenge. Two of the challenges identified were a compressed timeline with upcoming highway expansions and the land being partially on base and partially with private landowner and permitting with the possibility of needed relocation of structures. The next step will be to approach FDOT, learn lessons from the adjacent community project, meet with county staff and continue to engage with partners on the issue.



Teams discuss collaborative projects during breakout sessions.

ADJOURN

The organizers took some time to reflect and wrap-up the day by discussing some of the themes and opportunities for partnerships across the region that SERPPAS could facilitate and cultivate. Among the themes identified were:

- The opportunities for partnering with universities and Sea Grant programs to identify and fund research projects related to coastal resilience, especially those that require innovation.
- The need for social science data about people and economies to assess projects and help with prioritizing projects
- Feedback to funders about what is working, and what is not, so that they understand where longer timelines and flexibility in budgets is needed.

All participants were invited to continue participation in climate resilience collaboration through the CRRAWG of SERPPAS. The group has a monthly call and is an opportunity to learn from others and meet partners and colleagues from across the region.

EVALUATION

Eighteen evaluations were collected, 12 were paper responses collected immediately after the close of the workshop and 6 were electronic responses to the same questions collected after participant contact information and slides of presentations were shared via email.

Six Likert scale questions were asked:

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
The workshop was a valuable use of my time.			1	5	12
The purpose and goals of the workshop were clear.				6	12
The workshop was the right length of time.			4	4	10
The format of the workshop was effective for achieving the stated objectives.			2	8	8
The workshop location and logistics were reasonable.			2	7	9
The workshop was managed and facilitated effectively.				6	12

Workshop participants that did not agree that the workshop was the right length of time were asked give more details about timing and commented that the workshop could have been longer and that more time for brainstorming and breakout group work was needed.

Participants were asked to comment on what they liked most about the workshop, what they liked least and if they had any other comments.

The responses about what was most liked:

- Learning about other projects, learning new things, presentations on lessons learned
- Continued learning about how installations operate
- Networking and collaborative opportunities
- Last session- sharing of ideas
- Actionable plans/outcomes
- Breakout groups and developing projects
- Good meeting size and number of people
- The group that was assembled
- Everything kept on timeline
- Lunch, tour of Parris Island

The responses of what was least liked:

- Arrival time overlapping with lunch without lunch provided
- Setting could have been a little better for collaboration, more time needed for break out
- Could have included more military personnel
- Not enough time with people from other states

Other Comments:

- Not sure what Sea Grant does, also would have been good for everyone to do a 30 second introduction on the first day
- More time for generating project ideas as part of the agenda. The breakout on day 1 did not help much to tee-up the project generation. It took us a while to gain momentum, although we were really productive once we got into the swing of things, but needed more time. The report out template helped us to consolidate the conversation into something we could move forward.
- I would like more lessons learned from projects at different stages
- Was unclear what the actual goal of the workshop was. Just an FYI?, Meet and Greet? Need more defined intent as an attendee
- Felt a lot of the convo wasn't focused on livable, long-term action steps. Living shorelines are important, but only a limited measure. Other changes are needed too, in addition, that weren't talked about enough.

APPENDIX



Advancing Coastal Resilience in Southeast Defense Communities

August 29-30

MCRD Parris Island, South Carolina

Four Winds Family Readiness Center

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

Meeting Objectives

- Create a shared understanding of military priorities for climate/coastal resilience and community challenges for resilience along the coast.
- Create place-based teams and provide resources to stimulate project planning and set up for successful and continuing collaborations.
- 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.

Meeting Outcomes: Sea Grant and SERPPAS partners engage as place-based teams to advance coastal resilience planning and projects in their local defense communities that will build coastal resilience and support natural resources while supporting the military mission.

MONDAY, AUGUST 29		
12 - 12:30 p.m.	Arrive at gate to allow plenty of time for security checks	
1 p.m.	Welcome and Introductions	<p>Addie Thornton, SERPPAS Coordinator, <i>Texas A&M Natural Resources Institute</i></p> <p>Michelle Covi, Coastal Resilience DoD Liaison, <i>UGA Marine Extension and GA Sea Grant</i></p> <p>Col. Timothy R. Dremann, Chief of Staff, <i>MCRD Parris Island</i></p> <p>Nancy Walters, SERPPAS Facilitator</p>
1:30 p.m.	DoD Coastal Resilience Priorities	<p><u>Purpose:</u> <i>Understand military priorities for coastal/climate resilience and challenges on the local level.</i></p> <p>Dr. Mark Risse, Director, <i>UGA Marine Extension and GA Sea Grant</i></p> <p>Alicia Stenstrom, DOD Climate Action Team, <i>Office of the Deputy Assistant Secretary of Defense (Environment and Energy Resilience)</i></p> <p>Tracey Spencer, Environmental Division Director, <i>MCRD Parris Island</i></p>



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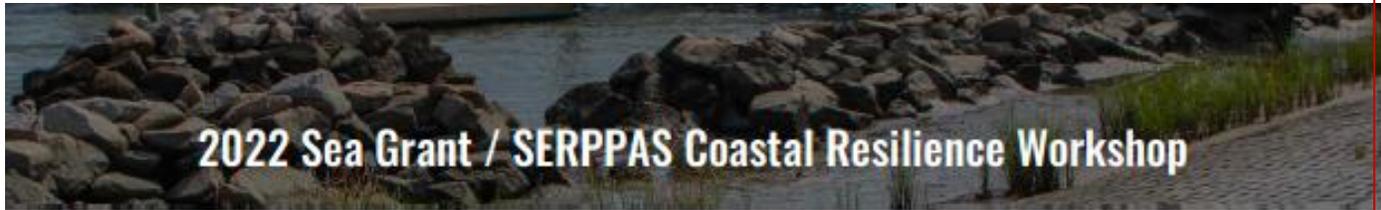
2:15 p.m.	Break	
2:30 p.m.	Military Installation Resilience Review and Low Country Resilience Planning	<p>Purpose: <i>Overview of resilience planning for defense communities and funding. Showcase the Low Country Military Installation Resilience Review and key partners in on-going local resilience planning and projects.</i></p> <p>Michelle Covi, Moderator</p> <p>Margit Myers, Program Activity Lead, Office of Local Defense Community Cooperation</p> <p>Panel Session: Stephanie Rossi, Planning Director, Low Country Council of Governments</p> <p>Juliana Smith, Long Range Planner, Beaufort County</p> <p>Mary Ryan Krieger, Deputy Community Liaison Planning Officer, MCAS Beaufort</p> <p>Kate Schaefer, Director of Land Protection, Beaufort County Open Land Trust</p>
3:45 p.m.	Break-out Discussion: State-based teams	<p>Purpose: <i>To begin thinking about the needs specific to the location and what is/is not being done to address climate resilience in each location</i></p>
4:15 p.m.	Coastal Resilience Projects and Pipelines	<p>Purpose: <i>Introduce NFWF's Coastal Resilience Fund project pipeline approach and successful project examples from the Southeast.</i></p> <p>Addie Thornton, Moderator</p> <p>Arielle Mion, Program Manager for National Coastal Resilience Fund, National Fish and Wildlife Foundation</p> <p>Panel Session: Ashby Worley, Coastal Climate Adaptation Director, The Nature Conservancy</p> <p>Tim Day, Deputy Director, Natural Resources Management Department, Escambia County, FL</p>
5:15 p.m.	Adjourn	

*Optional Dinner at Fish Camp (local seafood)
 1699 11th Street, Port Royal, SC*



2022 Sea Grant / SERPPAS Coastal Resilience Workshop

TUESDAY, AUGUST 30		
8:30 a.m.	Gather	
9 a.m.	Welcome back	
9:15 a.m.	REPI Partnerships and Climate Resilience	<p>Purpose: Discuss the goals of the REPI program and examples of successful REPI partnership projects in Sentinel Landscapes that build climate resilience.</p> <p>Kristin Thomasgard, Director, DoD Readiness and Environmental Protection Integration Program</p> <p>Panel Session: Chris Baillie, Resilience/Climate Adaptation Coordinator Eastern North Carolina Sentinel Landscape, North Carolina Coastal Federation</p> <p>Joy Brown, Marine Program Manager, The Nature Conservancy</p>
10 a.m.	Engaging Communities in Planning and Projects	<p>Purpose: Share best practices, success stories and challenges of community engaged coastal resilience projects.]</p> <p>Shana Jones, Assistant Director, Strategic Operations and Planning Assistance, UGA Carl Vinson Institute of Government, Director, Georgia Sea Grant Law Program</p> <p>Panel Session: Esther Adams, Manager of Strategic Initiatives, Center for Heirs Property Preservation</p> <p>Renee Collini, Coastal Climate Resilience Specialist, PLACE-SLR, Mississippi Alabama Sea Grant Consortium</p>
10:45 a.m.	Break Out Discussion	<p>Purpose: Teams identify and discuss opportunities for further partnership and specific ideas for projects that can be implemented within their state or Sentinel Landscape.</p>
12:15 p.m.	Working lunch	
1 p.m.	Report-outs	<p>Purpose: To share the project plans developed in each state and allow for feedback and insights from the other participants and discuss ways to support project regionally.</p>
2 p.m.	Adjourn	
2 – 4 p.m.	Options	Tour of Parris Island or Go to museum (half mile)



2022 Sea Grant / SERPPAS Coastal Resilience Workshop

LOGISTICS

MEETING LOCATION

Four Winds Family Readiness Center
201 Mexico St. Parris Island, SC
Located on MCRD Parris Island

HOTEL

A block of rooms is being held at the Hilton Garden Inn, Beaufort, SC at the rate of \$136/night (+ taxes and fees) on the nights of Sunday August 28th , Monday, August 29th and Tuesday, August 30th. Please call 1-800- HILTONS or the hotel directly at 843-379-9800 to book your room by Tuesday, August 9, 2022. To receive the group rate, please identify yourself as part of the Sea Grant/SERPPAS event when making your reservation. If making a reservation on-line, use the group code SGS. Reservations made after the cut-off date are subject to availability and the best available rate. Complimentary parking is available.

GATE SECURITY

To access MCRD Parris Island you will need to present a valid government issued photo ID, vehicle registration and proof of insurance. If you are driving a rental car, present a copy of the rental agreement. NOTE: Please plan to arrive between 12:00 and 12:30 to allow plenty of time to get through security at the gate.

DRESS CODE

The dress code is business casual.

DIRECTIONS:

Directions to Four Winds from Main Gate

- From Malecon Dr. take traffic circle to 3rd exit, stay on Malecon Dr.
- Continue straight, becomes Boulevard De France
- At end of street turn left onto Santo Domingo St.
- Turn Right on Mexico Street into parking lot or Park on Mexico Street

Directions to Parris Island from Hilton Garden Inn, Beaufort, SC

- From Boundary Street heading east turn right onto Ribault St.
- Continue on Ribault Street through Port Royal (about 6 miles)
- Take exit for Parris Island, Malecon Dr. to gate

COVID Protocol: The current protocol recommends the wearing of masks but does not require them. Social distancing is recommended to the extent possible.

Reduce waste: please bring a refillable water bottle.

ATTENDEES

First Name	Last Name	Job Title	Organization
Esther	Adams	Manager of Strategic Initiatives	Center for Heirs' Property Preservation
Christopher	Baillie	Resilience/Climate Adaptation Coordinator	Eastern North Carolina Sentinel Landscape/NC Coastal Federation
Jacob	Boyd	Chief, Habitat and Enhancement Section	NC Division of Marine Fisheries
Schumata	Brown	Town Manager	Town of Maysville
Joy	Brown	Marine Program Manager	The Nature Conservancy - South Carolina Chapter
Larry	Carlile	Wildlife Biologist	Fort Stewart
Eric	Christianson	Planner	Emerald Coast Regional Council
Lora	Clarke	Officer	The Pew Charitable Trusts
Susan	Cohen	Associate Director	UNC Institute for the Environment
Renee	Collini	Coastal Climate Resilience Specialist	MSU/Sea Grant
Cayla	Cothron	Climate Resilience Extension Associate	NC Sea Grant
Michelle	Covi	Coastal Resilience DoD Liaison	UGA Marine Extension and Georgia Sea Grant
Scott	Curtis	Director, Near Center for Climate Studies	The Citadel
Timothy	Day	Deputy Director	Escambia County Board of County Commissioners
Katie	Finegan	Coastal Processes Specialist	Coastal Carolina University/SC Sea Grant
Elizabeth	Fly	Director of Resilience and Ocean Conservation	The Nature Conservancy
Jill	Gambill	Coastal Resilience Specialist	University of Georgia Marine Extension and Georgia Sea Grant
Amanda	Guthrie	Coastal Climate and Resilience Specialist	SC Sea Grant
Jackie	Jackson	Resilience Program Administrator	Chatham County
Shana	Jones	Assistant Director	Carl Vinson Institute of Government, University of Georgia
Emily	Kenworthy	Public Relations Coordinator	Marine Extension and Georgia Sea Grant
Landon	Knapp	Coastal Resilience Specialist	S.C. Sea Grant Consortium
Mary Ryan	Krieger	Deputy CPLO/GER	Marine Corps Air Station Beaufort
Abi	Locatis Prochaska	Coastal Training Program Coordinator	ACE Basin NERR/SCDNR
Michelle	Lovejoy	Manager, Climate Resilient Coasts and Watersheds, NC	Environmental Defense Fund
Arielle	Mion	Program Manager, Coastal Resilience	National Fish and Wildlife Foundation
J. Scott	Pippin	Community Resilience Manager	UGA Carl Vinson Institute of Government
Neal	Pugliese	Special projects	City of Beaufort, SC

First Name	Last Name	Job Title	Organization
Laurel	Rhoten	Realty Specialist	MCAS Beaufort
Mark	Risse	Director	Marine Extension and Georgia Sea Grant
Hal	Robinson	Director of Legal Affairs / ACUB Director	Georgia-Alabama Land Trust, Inc.
Stephanie	Rossi	Planning Director	Lowcountry Council of Governments
Kate	Schaefer	Director of Land Protection	Open Land Trust
Juliana	Smith	Long Range Planner	Beaufort County Planning & Zoning Dept
Tracey	Spencer	Environmental Division Director	MCRD Parris Island
Sarah	Spiegler	Coastal Resilience Specialist	NC Sea Grant
Alicia	Stenstrom	Climate Preparedness and Resilience Specialist	Office of the Deputy Assistant Secretary of Defense (Environment and Energy Resilience)
Kirstin	Thomasgard	Director	REPI
Addie	Thornton	Coordinator	SERPPAS
David	Trail	Community Plans and Liaison Officer	MCAS Beaufort
Bill	Van Houten	Project Manager	OLDCC
Nancy	Walters	Process Consultant	Nancy R. Walters Consulting
Kent	Wimmer	Coordinator, Northwest Florida Sentinel Landscape	Defenders of Wildlife
Ashby	Worley	Coastal Climate Adaptation Director	The Nature Conservancy

RESILIENCE DEFINITIONS

Coastal Resilience is defined by the NOAA as the ability of a community to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events such as hurricanes, coastal storms, and flooding. Climate change is affecting coastal communities through sea level rise, and the increasing intensity and frequency of coastal hazards including compound flooding and coastal erosion.

Community Resilience is defined by the National Institute of Standards and Technology as the ability of a community to prepare for anticipated hazards and recover rapidly from disruptions or disasters. A broad disaster preparedness and community planning approach is necessary to ensure the resilience of the natural, conventional, economic, and human infrastructure.

Climate Adaptation is defined by the NASA Global Climate Change program as actions undertaken in a changing climate to reduce our risks from the harmful effects of climate change and making the most of any beneficial opportunities.

Climate Mitigation is defined by the NASA Global Climate Change program as reducing climate change by the reduction of the flow of greenhouse gases into the atmosphere either through reducing the sources of these gases or by enhancing the “sinks” that accumulate and store these gases (via carbon capture or carbon sequestration in forests, soils, wetlands, oceans or through new technology).

Climate Resilience is defined by the US Climate Resilience Toolkit (a website developed by the interagency US Global Change Research Program) as the ability to anticipate, prepare and respond to hazardous events, trends or disturbances related to climate. Climate resilience aims to reduce community vulnerability to the impacts of climate change through planning and the development of resilient infrastructure, agricultural and other key systems.

Hazard Mitigation is defined by FEMA as planning and improvements that reduce the loss of life and property by minimizing the impact of disasters. In a changing climate, these actions promote resilience through anticipating and adapting to predicted future conditions, therefore reducing the impact of future disasters.

Green Infrastructure is defined by the US EPA as measure that use plant and soil systems, permeable paving or other permeable surfaces or substrates, stormwater harvesting and reuse or landscaping to store, infiltrate or evapotranspire stormwater to reduce flows to sewer systems or surface waters.

Military installation resilience is defined by statute 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.”

Natural Infrastructure (NI) are natural systems, often intentionally managed or enhanced, that perform engineering functions. Examples include forests and wetlands that reduce riverine flooding and improve water quality for downstream communities, or reefs, marshes, beaches, and dunes that protect coastal property and infrastructure from coastal flooding and erosion.

Natural and Nature-Based Features (NNBF) refers to both Natural Infrastructure and systems that are constructed or restored, such as oyster shell living shorelines or reclaimed wetlands, and are harnessed to achieve particular objectives, such as reducing flooding or erosion, or securing safe and ample water supplies.

Nature-Based Solutions (NBS) is an umbrella term for solutions to human problems that use nature and/or natural processes. NI, NNBF and NBS are often used interchangeably.

SELECT TOOLS AND RESOURCES FOR COASTAL RESILIENCE

Flood Risk Planning Tools

- The most up-to-date sea level rise projections from the interagency team lead by NASA can be viewed at localslr.org
- Coastal County Snapshots (coast.noaa.gov/snapshots/) infographics are generated based on user selected locations and focus. The snapshot is directly connected to NOAA's [Coastal Flood Exposure Mapper](#).
- FEMA's National Risk Index has includes a mapping function (hazards.fema.gov/nri/map) to allow users to choose a location and generate a risk report.
- Stormwater Assessment tool swcweb.epa.gov/stormwatercalculator/
- US Army Corps of Engineers South Atlantic Coastal Study Risk Assessment [Viewer](#)

Natural Infrastructure and Restoration tools

- National Fish and Wildlife Foundation's Coastal Resilience Evaluation and Siting Tool (CREST) resilientcoasts.org/#Home
- The Nature Conservancy's Coastal Resilience program coastalresilience.org
- Southeast Conservation Blueprint mapping portal blueprint.geoplatform.gov/southeast/