

**Coastal Management Fellow
Georgia Coastal Management Program
October 2024**

“Strategically Enhancing Georgia’s Resiliency through a Multi-faceted Approach”

Background and Introduction

The Georgia Coastal Management Program (GCMP) is housed within the Georgia Department of Natural Resources Coastal Resources Division (CRD). CRD strives to balance economic development with the protection and preservation of invaluable coastal resources within its eleven-county service area. One of the main functions of the GCMP is to provide subject matter expertise to our local governments in the areas of coastal hazards, green growth, public access and land conservation, nature-based solutions, wetlands, geospatial tools, and funding. The GCMP has begun to look at its areas of expertise through a resiliency lens. The established definition of Coastal Resilience is the ability of a coastal community to adapt to changing conditions and withstand and recover from a societal, physical, economic, or ecological disruption.

The earth’s changing climate is one of coastal Georgia’s greatest environmental challenges. It is critical that preparations to adapt and reduce our vulnerabilities to the inevitable changes be initiated. Georgia’s coastal areas will be among the first to experience the effects of climate change. The region has already experienced rising sea levels that have increased 3.4 mm/year over the past 87 years (NOAA Sea Level Trends). During that time, rates of residential and infrastructure development along coastal Georgia’s waterways have increased significantly, resulting in more persons and property at risk. This has also resulted in a greater population of underserved communities needing to be included in the risk communication conversation.

Goals and Objectives

The first goal of this project is to focus the GCMP areas of expertise under the resilience umbrella through the development of an education and outreach strategy. The second goal will be to implement components of the strategy into the local communities depending on their needs, demographics, and strengths.

Milestones and Outcomes

Task 1. Information Collection

- Learn about the details and challenges of each specialty area within the regulatory and non-regulatory sections of the GCMP. **August 2024- October 2024.**
- Participate in partner meetings and workshops. **August 2024 -August 2026.**
- Identify each community’s underserved population through the USACE’s environmental justice tool screeningtool.geoplatform.gov, the US Census community resilience tool, FEMA’s National Risk Index, and any new tool released before the start date of the fellow. **September 2024 - October 2024.**

- Interview Federal and State partners routinely engaged in GCMP activities. **September 2024 - November 2024.**
- Create survey and distribute to partners who are doing similar work that is related to our specialty areas. The survey will aim to determine perceived education and outreach needs and gaps, methods of distribution. **October – November 2024.**
- Create a survey and distribute to public listservs to engage with various audiences on how they best receive information and learn of any challenges from their perspectives. **January – February 2025.**

Task 2. Development of Strategy

- Create a Resiliency Education and Outreach Strategy with implementation steps focused on multigenerational and demographic differences and needs. This document is intended for regulatory and non-regulatory staff and should be non-technical **March 2025- August 2025.**
- Provide drafts and updates to the strategy at monthly staff meetings for feedback and input. **March 2025-August 2025.**
- **Create a list of programmatic outreach needs and remaining challenges. September 2025.**

Task 3. Implementation and Dissemination

- Participate as a Steering Team Member for the planning of the 2025 Georgia Climate Conference. **August 2024- November 2025.**
- Attend and assist with coordinating the first biannual Resiliency Academy for Local Governments. **Fall 2024.**
- Assist with planning the second biannual Resiliency Academy for Local Governments. **January 2026 – July 2026.**
- Meet with GCMP staff members individually to discuss results and implementation plans for each specialty area. **October 2025.**
- Visit each community to provide education and outreach as identified in GCMP’s current Section 309 Strategy and through the Diversity, Equity, Inclusion and Justice tools. This will be done with staff and the strategy methods from Year 1 will be implemented. **October 2025 – July 2026.**
- Work with CRD’s GIS specialist to update the Coastal Resiliency Hub with newly developed language and relevant information. **October2025 - December 2025.**
- Work with CRD’s Public Information Officer develop outreach materials and messages needed for the multigenerational and various demographic outlets. **January 2026- May 2026.**
- Present project results at the 2025 Georgia Climate Conference. **November 2025.**
- **Present project results as a Brownbag Presentation hosted by the GCMP. May 2026.**

Project Description

GCMP's current Section 309 strategy (2021-2025) is to develop a Resiliency Reference Guide for building coastal resiliency through assessing vulnerabilities, evaluating opportunities for nature-based infrastructure (NBI) solutions, and encouraging implementation through sound science and policy decisions. The GCMP will develop an improved Hazard Vulnerability Assessment (HVA) that identifies community and natural resource vulnerabilities that will steer program efforts. The Resiliency Reference Guide will include developing a shoreline management framework that incorporates the state of the science for estuarine shoreline management, developing resilient beach management planning tools to support NBI practices, and supporting local and state program changes by creating scientific tools, developing local policies, and substantiating practices to support the resiliency implementation. The Guide will incorporate the science and tools developed for NBI practices, policies and best practices identified for coastal communities, and specific vulnerabilities to coastal hazards identified through the assessment. This Guide will assist coastal communities in more effectively mitigating risks and enhancing resiliency.

The Hazard Vulnerability Assessment tool is being developed to prioritize community needs as it relates to their individual coastal hazard vulnerabilities. Originally developed with the Governors South Atlantic Alliance in 2012, HVA is an assessment built within the program AMBUR (Analyzing Moving Boundaries Using R). AMBUR-HVA uses a variety of biological and physical datasets including flooding, sea level rise, habitat data, shoreline change, LiDAR, fetch, etc. and intersects these with population datasets (wealth, age, gender, race, etc.) to identify socially vulnerable areas. AMBUR-HVA creates a scientifically defensible and management-friendly product that generates a coastal vulnerability index that can then be used to provide a consistent quantification of coastal Georgia's vulnerability to coastal hazards and inform GCMP's assistance to coastal communities.

GCMP has focused on resiliency efforts through multiple approaches that target different coastal areas, habitats, and populations. Throughout a previous 309 Strategy, "Enhancing Coastal Resilience with Green Infrastructure", the GCMP developed environmental and economic incentives and policy recommendations to encourage coastal local governments to adopt ordinances related to green or NBI practices as a means to enhance resiliency to coastal and riverine flooding. In addition, the GCMP worked with the City of Tybee Island to implement dune enhancement and creation projects through regulatory guidance and best management practices. The Shore Protection Act (SPA) is the state authority by which these projects are authorized; however, in addition to state policy, GCMP staff provided technical assistance to ensure best practices that coincide with the SPA. Lastly, the GCMP and its partners are leading the effort to guide living shoreline planning, design, implementation, and monitoring. The goal of implementing living shorelines in Georgia is to provide alternatives to traditional estuarine shoreline stabilization techniques that increase habitat value and resiliency to rising sea level.

Each of the above efforts is unique in the people, places, and protection targeted. However, collectively they demonstrate the multiple ways that the GCMP is addressing NBI, a growing priority of federal, state, and local managers as a mechanism by which to address coastal resiliency.

Effective communication of these tools and results is critical to resiliency in Coastal Georgia yet is one of the most difficult tasks. The goal for the fellow is to develop an understanding of the education and communication needs across the GCMP and devise a consistent message that amplifies each subject area while also resonating with a variety of audiences and stakeholders. A specific priority for the fellow will be to determine the methods for meaningfully communicating with local underserved or disadvantaged communities in the GCMP's 11 coastal county service area. The fellow will also meet with coastal local governments to communicate the results from the HVA. This work will be delivered through the development of a Resiliency Outreach Strategy and Implementation Plan.

Upon the research and initial investigation phase, the fellow will meet with GCMP staff whose work relates to resiliency efforts, participate in partner meetings, and collect additional information through professional and public surveys. The CZM Fellow will fill a critical gap in GCMP's resilience efforts by working with individual subject matter experts to gain an understanding of the science, challenges, policies, and needs from their perspective, including the different stakeholders and communities. These subject areas are coastal hazards, green growth, wetland health and monitoring, living shorelines, public access, geographic information systems (GIS) and mapping, marsh and shore permitting, and funding.

The developed strategy will be implemented in GCMP's work with community members so that information can be meaningfully and effectively presented to them. The fellow will work with CRD's Public Information Officer and GIS Specialist to update the agency's Resiliency Hub and develop outreach materials for the multiple generational and demographic outlets. They will visit each community to provide these materials to move Georgia's coast toward the path of resilience. The fellow will present results of the project to professionals and members of the public at workshops, conferences, the GCMP's Brownbag series, and other platforms that are beneficial in the transfer of results. The fellow will assist in coordinating the 2025 Georgia Climate Conference and first ever Resiliency Academies for Local Governments. They will also attend these events, and present on the developed strategy for the state's resiliency efforts at the Climate Conference.

Diversity, Equity, Inclusion and Justice

The GCMP counties include Brantley, Bryan, Camden, Charlton, Chatham, Effingham, Glynn, Liberty, Long, McIntosh, and Wayne. Using the USACE Environmental Justice Tool (screeningtool.geoplatform.gov), 150 census blocks are found within the 11 counties; of these 56 census blocks (37.3%) are identified as disadvantaged. Georgia's coastal counties are made up of an average of 33.95% non-white populations, 14.65% over the age of 64, 50.25% low income, 38.6% of individuals live below 200% of the Federal Poverty Line, and an unemployment rate of 6.98% which is nearly two times the national rate of 3.5% (as of July 2023). The area also ranks in the 65th percentile for expected building loss rate (as determined by the Natural Hazards Risk Index). The US Census Community Resilience Tool, using the 2021 American Community Survey (ACS)

(<https://experience.arcgis.com/experience/b0341fa9b237456c9a9f1758c15cde8d/>), shows that 23.2% of residents in the coastal Georgia live with three or more risk factors including income to poverty ratio, single or zero caregiver household, crowding, communication barrier, households without full-time employment, disability, no health insurance, age 65 or more, no vehicle access, or no broadband internet access. FEMA's National Risk Index (<https://hazards.fema.gov/nri/map>) ranks eight of the 11 coastal counties as relatively moderate risk to high risk for the hurricane hazard. All 11 counties have a moderate or higher social vulnerability; five counties have a vulnerability core that places them in the high category. Many of the disadvantages identified add additional vulnerability in the context of climate change impacts. Inequitable access to resources during an approaching disaster can make evacuation and other preparedness actions very difficult, which can lead to additional challenges in the recovery phase. This can be addressed through a commitment to involve underserved communities and utilize their input during the planning process for disasters today and for disasters compounded by climate change impacts.

This project will ensure the inclusion of underserved communities through identification of populations in each county as listed above and will include these in the strategy and implementation. Rather than presenting information to these communities as a whole, the focus will be on listening and gathering of information as it relates to what influences each generation and demographic decisions when it comes to resiliency.

Fellow Mentoring

The Fellow will be immersed in a project that cuts across several areas of the GCMP: Coastal Hazards, Green Growth, Living Shorelines, Wetlands, Policy, Public Access/GIS, and Grants Management. Primary mentorship and day-to-day supervision will come from Jennifer Kline, the GCMP Coastal Hazards specialist. In addition, the fellow will also receive guidance and mentorship from the Coastal and Ocean Management Program Manager (COMP), Jan Mackinnon and all staff within the program will be responsible for sharing the history and strategies for each of their specialized subject matter areas.

Our intention is for the fellow to experience active coastal management, gain key skills in coastal policy, resource management, stakeholder engagement, and public interaction, while pursuing their own meaningful project. Being seated within the GCMP, the fellow will work alongside specialists focusing on a number of coastal management issues. They will function as a part of the team, attend routine staff meetings and updates, outreach and education activities, and various stakeholder groups such as the Coastal Advisory Council. Through the course of their work, the fellow will interface with partners aligning with GCMP initiatives to ensure no duplicity in effort. The GCMP is also co-located with Regulatory, Compliance and Enforcement, Shellfish and Water Quality, Marine Fisheries, Wildlife Resources (game and non-game species such as shore birds, sea turtles and marine mammals), State Parks and Historic Sites and DNR Law Enforcement. The Fellow will be free to engage these entities to learn more about the diversity of activities that contribute to state coastal management.

Office Environment

The GCMP office environment consists of full time in-person office hours, 8:00am-4:30pm. The fellow will have an office space that is shared with another professional on the GCMP team. The benefits of full time, in-person office hours are many. On a daily basis, staff interact and plan with each other and other teams also funded by the GCMP (regulatory, shellfish and water quality, compliance and enforcement, outreach/education). Given that this fellowship is built around learning the existing program, including its history, the successful candidate will find in-person meetings with a wide range of staff extremely useful to learning. Additionally, in preparation for developing outreach and education materials, the in-person environment will be conducive to access computers, software, and the Public Information Officer more easily.

Project Partners

Currently, the GCMP is working with multiple partners to work on initiatives related to planning, restoration, and funding data to inform resiliency strategies. GCMP has responsibility for working with communities to provide tools, including data, for decision making processes. Furthermore, the GCMP works with researchers to create and update relevant datasets to be used in planning strategies. Partners include The Nature Conservancy, the University of Georgia, the Carl Vinson Institute of Government within UGA, the Georgia Conservancy, partners affiliated with the Coastal Hazards Community of Practice (U.S. Army Corps of Engineers, Georgia Tech, etc.), the Georgia Living Shorelines Workgroup, the CRD Shoreline Policy Restoration and Resilience Team (which includes various programs within the GCMP).

Each partner is integral in defining a sound process in moving a successful project forward. This project will strengthen the existing partnership by providing input and capacity to address prioritized items that GCMP is responsible for. These partners along with other state and federal entities will serve as the survey audience as well as additional subject matter expertise.

Cost Share Description

The GCMP will provide \$7,500/year for two years through state funds. These funds have been identified and will be included in upcoming budget preparations. GCMP will work with accounting and legal departments to ensure that the proper agreements and channels are in place to transfer funding to the NOAA identified outside contractor.

In addition, GCMP will provide the Fellow with in-kind resources to support a successful Fellowship. These resources will include office space, equipment and supplies to perform the necessary duties, software needed to perform tasks, as well as in-house training.

Strategic Focus Area

This project will address the focus areas of Resilient Coastal Communities and Healthy Coastal Ecosystems. The promotion of resilient communities is a key factor in this project. Both short-term episodic events such as hurricanes and coastal storms as well as long-term chronic changes like drought, climate change and sea level rise are major concerns. These threaten our coastal communities, a multi-million-dollar tourism industry, coastal and watershed development and infrastructure, and local fishing industries. Understanding the communication needs and gaps of coastal resiliency will allow for an informed Education and Outreach Strategy to be developed and implemented. The tools and resources created will allow the GCMP, it's partners, local governments, underserved communities and the general public to be included, informed, and enabled to make better informed decisions.