

PROGRAM FOR LOCAL ADAPTATION TO CLIMATE EFFECTS: SEA LEVEL RISE



A partnership between Mississippi-Alabama Sea Grant Consortium, Florida Sea Grant, NOAA Sea Grant, and Mississippi State University to support and enhance sea-level rise resilience in the northern Gulf of Mexico.



As sea levels rise along the coast, rain storms will cause more frequent flooding as the water has no where to go. Photo credit: Carrie Stevenson

STRATEGIC PLAN

2021 - 2024

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Weeks Bay National Estuarine Research Reserve staff in one of their beautiful coastal marshes at peak bloom. Photo credit: Renee Collini

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BACKGROUND

A need for continued support in tackling climate change with an emphasis on sea-level rise (SLR) has been highlighted across the northern Gulf of Mexico (nGOM). With SLR in the nGOM projected to be around 25% greater than the global average [1], there will be significant ecological, economical, and cultural impacts if coastal decision-makers are not able to take effective adaptive action. Specific needs to be addressed were identified through a series of recent engagement efforts throughout the region. The Northern Gulf of Mexico Sentinel Site Cooperative (Cooperative), a partnership of local, regional, and national organizations and agencies working on SLR resilience, had an annually-updated Implementation Plan that included identified needs and gaps around SLR resilience. Further, in 2020 the Mississippi-Alabama Sea Grant Consortium, Gulf of Mexico Alliance, and the Gulf of Mexico Climate and Resilience Community of Practice each undertook engagement activities with their stakeholders and partners. All three groups received overwhelming feedback indicating partners are looking for support around understanding, planning for, and implementing projects related to SLR resilience. Requests through those efforts included technical support, enhanced information regarding the cost-benefits of SLR adaptation efforts at multiple scales, support in prioritizing SLR resilience projects, and educating and engaging with coastal residents to increase salience of SLR resilience needs in the region.

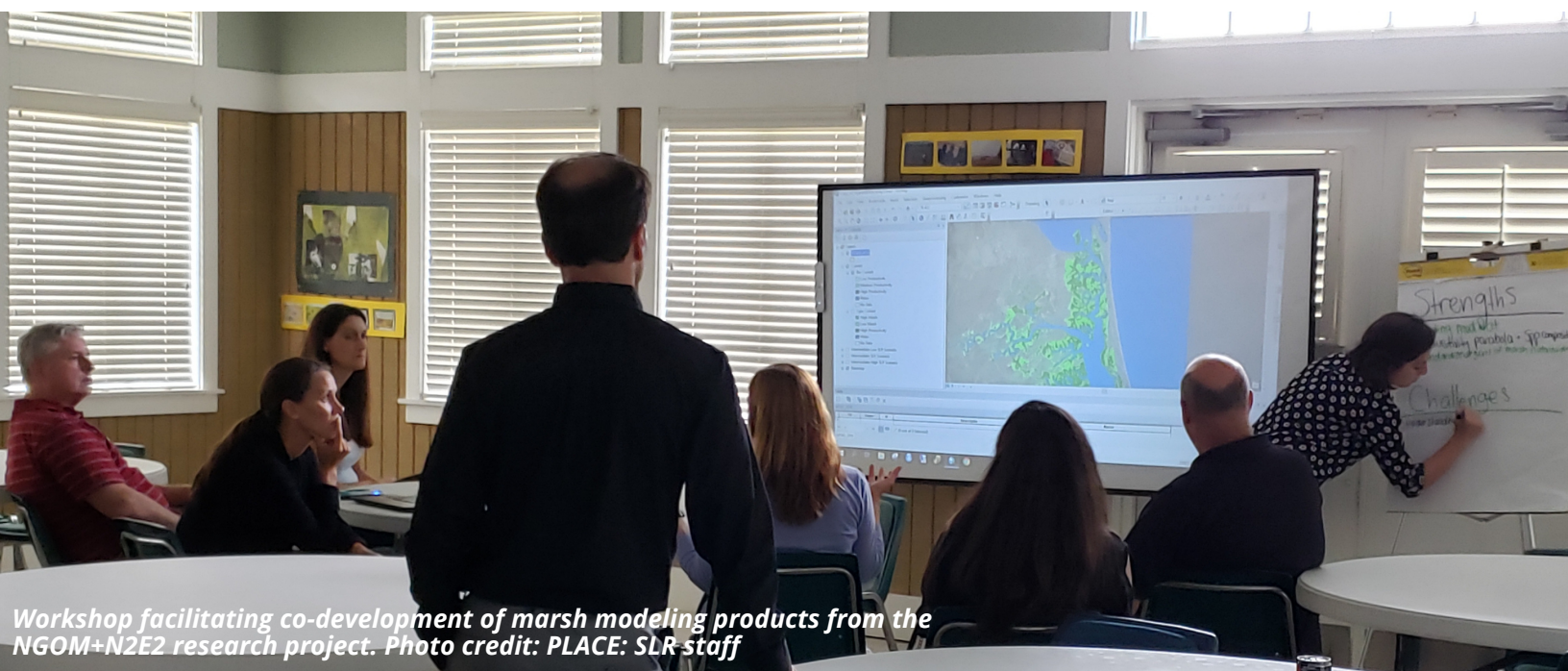
The Program for Local Adaptation to Climate Effects: Sea-Level Rise (PLACE: SLR) was established to leverage extensive investments in science, service, and stewardship around SLR resilience in the nGOM. PLACE: SLR will build upon efforts from the Cooperative to continue to increase nGOM SLR resilience. From 2014 to 2020, Cooperative staff, partners, and stakeholders worked together to identify and fill gaps and needs in SLR science and management including overcoming fiscal and communication barriers, elevating the frequency and quality of discussion around SLR resilience, and increasing regional capacity to tackle complex socio-environmental topics.

[1] William V. Sweet et al., *"Global and Regional Sea Level Rise Scenarios for the United States,"* Technical Report (NOAA NOS CO-OPS, 2017).

PLACE: SLR is a joint venture between Mississippi State University and Sea Grant, specifically the NOAA Sea Grant Office, Mississippi-Alabama Sea Grant Consortium, and Florida Sea Grant. PLACE: SLR's geographic area, defined as the coastal counties from the Pearl River to the Suwannee River, was chosen due to the similarity in anticipated climate change impacts, specifically those related to SLR. A Coastal Climate Resilience Specialist (Specialist) has been designated to lead PLACE: SLR to facilitate a successful transition from the Cooperative over the new program's initial two years. The Specialist will be in a unique position, allowing work across a range of geographies (i.e., local to regional) to engage with stakeholders at all levels. The Specialist will also foster existing and new collaborations to connect rapidly advancing research with communities and natural resource managers who can utilize the information to increase community and ecological resilience to SLR.



A boat glides on Fish River in front of the Weeks Bay Reserve Tonsmeire Resource Center. Photo credit: Mikaela Heming



Workshop facilitating co-development of marsh modeling products from the NGOM+N2E2 research project. Photo credit: PLACE: SLR staff

MISSION STATEMENT

PLACE: SLR will foster a network of individuals and organizations working to enhance resilience to coastal inundation under rising sea levels in a changing climate. It will increase access to and application of relevant research, stimulate dialogue around vulnerabilities and adaptation strategies, and provide resources that facilitate resilience and mitigation actions. These goals will be achieved by working directly with stakeholders across the coastal northern Gulf of Mexico to identify critical gaps and address them by leveraging the resources and expertise of the network.

PURPOSE

The purpose of PLACE: SLR is to increase resilience to climate change along the northern Gulf of Mexico. The program will focus on resilience issues related to water and a changing climate – specifically sea-level rise, which compounds inundation and extreme rainfall events to generate a plethora of coastal flooding hazards. Hazards include but are not limited to hurricanes, nuisance flooding, erosion, coastal habitat degradation and loss, saltwater intrusion, and stormwater flooding. Increased resilience will be accomplished by identifying and addressing needs of coastal decision-makers and stewards of the built and natural environments.

FOCUS AREAS AND GOALS

PLACE: SLR is supported by Mississippi State University, NOAA Sea Grant, Mississippi-Alabama Sea Grant Consortium, and Florida Sea Grant; therefore, the PLACE: SLR focus areas and goals align with the goals of those programs.

FOCUS AREAS

The Sea Grant network recognizes four cross-cutting domains of resilience: built, natural, social, and economic. These will serve to guide PLACE: SLR's definition and pursuit of SLR resilience. PLACE: SLR will operate within the following two primary focus areas:

- Healthy Coastal Ecosystems (HCE)
- Resilient Communities and Economies (RCE)

An additional focus area will include Environmental Literacy and Workforce Development (ELWD), as many activities will indirectly support this focus area (e.g., SLR trainings for professionals).



Marsh on Dauphin Island, Alabama. Marshes are a critical component to a healthy, resilient coastline. Photo credit: Renee Collini

GOALS

Following the Sea Grant network's example, PLACE: SLR has defined its goals by focus area as:

Healthy Coastal Ecosystems

1. Habitat, ecosystem services, and the services they provide are protected, enhanced, or restored.
2. Land, water, and living resources are managed by applying sound science, tools, and service to sustain ecosystems.

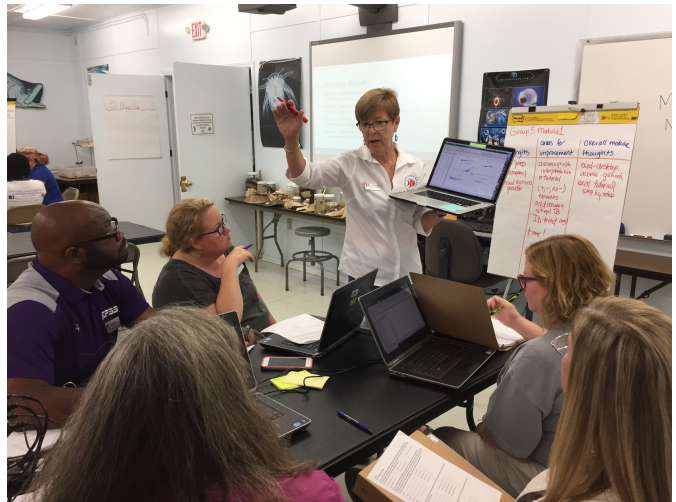
Resilient Communities and Economies

1. Coastal communities use their knowledge of changing conditions and risk to become resilient to extreme events, economic disruptions, and other threats to community well-being.

Environmental Literacy and Workforce Development

1. An environmentally literate public that is informed by lifelong formal and informal opportunities that reflect the diversity of the nation's coastal communities.
2. A diverse and skilled workforce is engaged and enabled to address critical local, regional, and national needs.

Climate change is a ubiquitous problem. But, in pursuing these goals, SLR resilience can be fostered across a variety of sectors - approaching the problem along all fronts.



(Left) Flooding and wind damage on Dauphin Island, AL after Hurricane Sally. Photo credit: Meg Goecker
(Right) Working with educators to develop a curriculum on sea-level rise. Photo credit: Sonia Vedral

APPROACH FOR IDENTIFYING AND ACHIEVING OBJECTIVES

IDENTIFYING GAPS AND NEEDS

PLACE: SLR will achieve their goals by working directly with stakeholders (defined below) to determine existing gaps and needs around SLR resilience and strategies for addressing these gaps and needs. This will occur at biannual PLACE: SLR meetings. Attendees at these biannual meetings are intended to be from the entire network (e.g., Implementation Committee, Advisory Committee, Collaborators) with an emphasis on the Advisory Committee, which is representative of the stakeholders the program supports. At these meetings participants will:

- identify climate resilience gaps and needs,
- prioritize gaps and needs for the coming years, and
- brainstorm ideas for addressing identified gaps and needs.

DEVELOPING OBJECTIVES AND ACTION ITEMS

The Specialist will develop a two-year action plan that will set objectives and activities based on the information obtained at the biannual meetings. The Advisory Committee will facilitate development by setting priorities and identifying connections. The Implementation Committee will facilitate implementation of actions that address the priorities and the Management Team will provide final sign-off on the action plan.

TYPES OF ACTION ITEMS

To achieve the objectives, the following types of action items will be pursued.

1. Enhance access to SLR science and related data.
2. Support application of SLR science and related data in coastal decision-making.
3. Foster informed and productive dialogue about SLR vulnerabilities and adaptations.
4. Identify and pursue funding for implementing SLR adaptation or mitigation actions.

DESCRIPTION OF NETWORK

STAKEHOLDERS

These are groups that will be considered the primary focus for engagement around translating existing science, co-developing science to address gaps, and supporting the identification and implementation of SLR resilience actions/efforts. The primary focus of PLACE: SLR will be on coastal decision-makers and stewards of the coastal built and/or natural environments. Secondary stakeholders will be those entities on which the primary stakeholders rely, such as regional planning organizations or coastal consultants. Tertiary stakeholders include any coastal residents, community groups, educators, professionals, or others who are attempting to address SLR resilience.

ADVISORY COMMITTEE

The Advisory Committee will consist of representatives from the primary stakeholders identified above. It will meet annually, alternating between agenda setting workshops and progress update meetings. Agenda setting workshops will consist of setting priority gaps and needs, identifying specific actions for the PLACE: SLR staff to undertake, and relationship building and maintenance. Progress meetings will include progress updates, opportunities for mid-action plan course corrections as needed, and relationship maintenance between stakeholders, collaborators, and PLACE: SLR staff.

IMPLEMENTATION COMMITTEE

The Implementation Committee will be representative of the geography and diversity of stakeholders from the PLACE: SLR. The Implementation Committee will meet bimonthly and discuss progress on actions for addressing SLR resilience, as identified at the PLACE: SLR biannual meetings. Further, they will facilitate project implementation, networking, and leveraging of their networks and additional capacities to support PLACE: SLR efforts. Finally, the Implementation Committee will help integrate outputs and outcomes developed by PLACE: SLR across the Committee's own networks and systems as appropriate.

COLLABORATORS

These are organizations and individuals that can either provide technical support, conduct advanced research, or serve as partners to represent or engage with an even broader array of stakeholders.

MANAGEMENT TEAM

These are representatives from the Sea Grant programs that are directly supporting the program and the Specialist position. This group will ensure the program's work is aligned with the strategic plans of FL and MS-AL Sea Grant programs, NSGO expectations, and MSU requirements. They will also provide guidance on the suitability of actions based on stakeholder and advisory committee's needs, and facilitate the Specialist's ability to directly serve coastal communities within the program's range. Additionally, this will ensure that the Specialist is engaged and integrated into activities across both Sea Grant programs.

STAFF

PLACE: SLR will have a dedicated Coastal Climate Resilience Specialist, with funding from 2021-2022, and any other temporary hires brought on via grant or other funding sources to support accomplishing the objectives of PLACE: SLR. The Specialist will be responsible for participating on the Management Team, implementing the engagement outlined above and in the following section, and supervising any temporary hires.



(Left) Students learning about living shorelines in coastal Mississippi. Photo credit: MS-AL Sea Grant Consortium (Middle) Educators exploring an activity from the Sea-Level Rise in the Classroom curriculum. Photo credit: Sonia Vedral (Right) The Northern Gulf of Mexico Sentinel Site Cooperative Team with their Climate Adaptation Leadership Award. Photo credit: Carey Schafer



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