

Testimony of Dr. Monty Graham
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Sub-Committee on Oceans, Science, Fisheries and Weather
America's Waterfronts: Addressing Economic, Recreational, and Environmental Challenges
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Chairman Gardner, Ranking Member Baldwin, and esteemed subcommittee members, thank you for this opportunity to testify on behalf of The University of Southern Mississippi and Mississippi coastal region. I appreciate your interest in addressing the economic, recreational, and environmental challenges associated with working waterfronts. This is fortuitous timing, as the state of Mississippi is currently working to strengthen its coastal communities and waterfronts to create a resilience-based economy, and I believe that these efforts can be supported and strengthened by federal activities. I appreciate Ranking Member Baldwin's work to support waterfront community revitalization and resiliency through the *Waterfront Community Revitalization and Resiliency Act* and have some ideas to expand upon and strengthen last Congress' already solid piece of legislation.

There are three takeaways from my testimony today:

1. Resiliency is baked into the DNA of coastal communities in Mississippi following a generation of natural and human-related engineering disasters;
2. Mississippi is at the critical point of making large decisions that will move the coastal working waterfront away from a disaster-based economy to a resilience-based economy through workforce and economic diversification;
3. Federal efforts, such as the *Waterfront Community Revitalization and Resiliency Act*, can aid our communities in reaching this much-needed resiliency, but from lessons learned along the Mississippi coast, I recommend the Committee consider the role of regional approaches to resiliency planning.

Mississippi's Economy

As you know, Mississippi's working coast has a rich history tied to the sea. Harvests for shrimp, oysters, and numerous species of fish abound from what has been coined the "Fisheries Fertile Crescent" around the nutrient-rich waters fed by many rivers. The warmer winter climate has been bringing tourists to the coast for more than 100 years. Visit us in February, and you might see as many Wisconsin as Mississippi license plates. And shipbuilding continues to rule manufacturing in Mississippi with a history pre-dating the establishment of the United States. World War II was fought and won with Mississippi-built ships, and that carries today as nearly 70% of the surface warfighting ships of the U.S. Navy are built in Mississippi. And our warm Mississippi waters are connected to the Arctic, as the next generation of heavy icebreakers for the United States Coast Guard are now under construction in Mississippi. Huntington Ingalls shipyard in Pascagoula remains the state's largest single-location employer, creating 12,500 jobs.

We are extremely proud of Mississippi's rich history and contributions to our nation in shipbuilding, fishing, and tourism. These key sectors have the most direct contact to the Gulf of Mexico and form the basis for what is Mississippi's maritime blue economy.

But, the Gulf of Mexico, as richly as it provides opportunity, also carries tremendous risks. There exists now an entire generation of young people entering the workforce who have experienced at least one significant disaster in their Gulf of Mexico at least every five years: Hurricane Katrina, the Deepwater Horizon oil spill, and two significant openings of the Bonnet Carré Spillway (which have flooded the entire Mississippi coast with freshwater from the Mississippi River leading to significant mortality of fisheries, dolphins and sea turtles, and now generating an economically crippling harmful algal bloom expected to persist through the remainder of this summer). I point out these disasters as specific examples because they reflect major impacts to communities though damage to infrastructure, human health and well-being, as well as job loss.

The recovery and restoration funds, most of them federal, came. Physical recovery can be slow, but it does occur. I would say that for any single disaster, no matter how large, Mississippians exhibit incredible resiliency. But in the eyes of the youngest working generation, they must feel like they are in a boxing match with their hands tied. Mind you, these disaster-recovery cycles are still happening on top of all the other crises we face as a nation, such as housing market collapses, recessions, and the opioid epidemic. The expectation for them must be that some disaster is coming every five years, then that will be followed by recovery funding. This is what you would call a disaster-based economy.

The goal now for Mississippi is to move from that disaster-based economy to a resilience-based economy. This is where the Committee's work through the working waterfronts legislation will have substantial influence on that transition.

Resiliency planning in advance of a major disaster is the key to quick and successful recovery. But we should measure success on the true definition of resiliency, which is not to simply bounce back but to bounce forward. Since Hurricane Katrina in 2005 and Deepwater Horizon in 2010, Mississippi has received billions of dollars in recovery and settlement funds with an eye on bouncing forward. Much of these monies have been spent on needed re-engineering of our coastlines and infrastructure.

But coastal engineering is not the only, or sometimes even the best, answer. We need to reform our blue economy to be more resilient. Taking a page from my freshman *Introduction to Ecology* textbook, the healthiest ecosystems are both productive and diverse. Productivity and biodiversity buffer an ecosystem against damage. Similarly, productive and diverse economies are also inherently buffered against major disruption related to disaster.

In Mississippi, we are building a new blue economy to diversify our traditional economy founded on shipbuilding, fishing, and tourism. This economy will build on new emerging technology fields around unmanned maritime systems. It creates opportunities for high-paying science, technology, engineering, and math (STEM) jobs, such as robotics engineering and machine-learning computer skills. It provides new opportunities for Mississippi's best and brightest students to stay on the coast. In effect, it builds a new and more resilient ecosystem.

Using the *Waterfront Community Revitalization and Resiliency Act* to Create a Resilience-based Economy

To Governor Phil Bryant's great credit, this new blue economy was not reactionary to a crisis. Rather, it was born from a deliberate plan created by his Ocean Task Force to create a strategic roadmap for new economic opportunities in maritime technology. Governor Bryant knew economic growth on the coast had to be oriented to the maritime economy and that it had to add to coastal economic resiliency. This Committee has played a significant and important role in Mississippi's new blue economy with the passage of the *Commercial Engagement through Ocean Technology (CENOTE) Act of 2018*. On behalf of Mississippi, I thank you for that work. I look forward to similar legislation, such as the forthcoming *Advancing the Quality and Understanding of American Aquaculture (AQUAA) Act*, to have comparable incentives for economic development around aquaculture to continue building a resilient economy in coastal Mississippi.

The *Waterfront Community Revitalization and Resiliency Act* can help support Mississippi's ongoing efforts to ensure resiliency in a number of ways. I'm particularly interested in components of the resiliency plan that aid in efforts to further diversify our economy and that address ecosystem challenges, such as the natural and human engineering disasters I described above.

I appreciate the proactive approach of this bill. Currently, disaster funding is reactive in the sense that we implement resiliency measures after the fact using disaster recovery funding. While disaster recovery aid is badly needed and necessary for recovery, if we're not taking steps to make our communities more resilient in the first place, we're always playing catchup after a disaster strikes, and our future resiliency will only be incremental at best. Encouraging and supporting communities' efforts to develop forward-looking plans for resiliency will strengthen them and will ultimately reduce the amount of federal spending on disaster recovery.

A Regional Approach to Resiliency Planning

The legislation is strong, it's proactive and it will no doubt carry cost-savings to the taxpayer in the long run. I would, however, encourage you to consider taking a regional approach to resiliency planning. The previous bill targeted units of government for eligibility. However, in Mississippi, Hurricane Katrina, Deepwater Horizon, and the current flooding from the Mississippi River spread impacts across multiple governmental boundaries. Disasters don't strike cities, they strike regions. The National Academies of Sciences, Engineering, and Medicine recently published their report, *Building and Measuring Community Resilience: Actions for Communities and the Gulf Research Program*. One of the case studies they examine is implementation of the National Institute of Standards and Technology's Community Resilience Planning Guide in Boulder County to direct federal recovery funding. This cooperative group included Boulder County, as well as four cities and three towns within the county. This is a prime example of regional resiliency planning. Additionally, one of the report's recommendations is developing a "major, coordinated initiative" around community resilience, which includes involving several communities and fostering interactions across and among them. The National Academies' Gulf Research Program made this recommendation for Gulf resiliency, and this legislation would authorize support for such an approach.

In Mississippi, we adopt a brand for our 80-mile waterfront as “One Coast” because the municipal jurisdictions across the ten coastal cities are not apparent to the visitor. “One Coast” reflects the common goals and interests of coastal Mississippi. Where the Gulf Coast Regional Planning Commission adopts transportation planning goals for the “One Coast,” I believe resiliency planning would be best served if incentivized at the regional level as well.

I would go even further to encourage resilience planning across the entire Gulf region using the Gulf of Mexico Alliance (GOMA), a network of the five Gulf states. GOMA is authorized currently by each of the governors. Hopefully it will be authorized by Congress under the recently introduced *Regional Ocean Partnership Act*. Thank you, Chairman Wicker, for your leadership on this topic.

When needed at the national level, our Consortium for Ocean Leadership, a nonprofit based here in the nation’s capital that represents the leading ocean science, research, and technology organizations, stands ready to facilitate resiliency planning to the benefit of overall ocean security. And, I would acknowledge the vital importance of coastal and Great Lakes Sea Grant Programs in forging regional and national resiliency planning as well.

Finally, anytime we talk about resiliency of a maritime economy, we must acknowledge the importance of healthy and productive oceans, lakes, and waterways. An overfished Gulf choked by plastics and harmful algal blooms does not benefit the nation. In fact, it increases our national vulnerability. As we move forward, we must ensure good management decisions are supported by the best science. I leave you with this vision from Admiral James Watkins,

“Our oceans, coasts, and Great Lakes are clean, safe, prospering, and sustainably managed. They contribute significantly to the economy, supporting multiple, beneficial uses such as food production, development of energy and mineral resources, recreation and tourism, transportation of goods and people, and the discovery of novel medicines, while preserving a high level of biodiversity and a wide range of critical natural habitats.”

Thank you, Chairman Gardner, Ranking Member Baldwin, and the rest of the subcommittee members for your efforts to achieve this vision and for having me here to testify today.