

Climate Activities in the Region: How are Local Communities Adapting?

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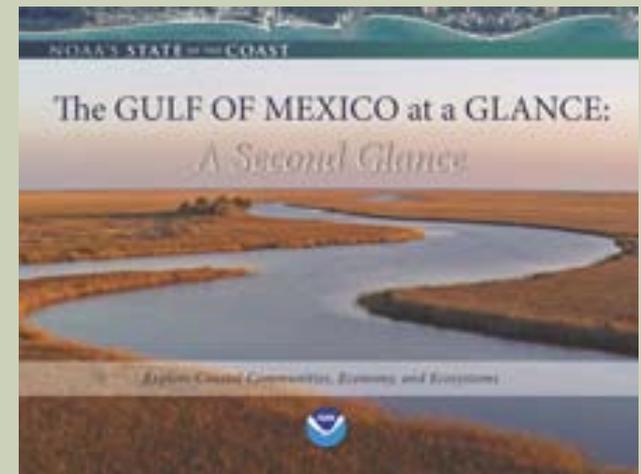
**WHY SHOULD WE CARE
AS A REGION?**

We are
VULNERABLE

THE GULF AT A GLANCE*

- Population in the Gulf Coast Region has increased by 109% since 1970, compared to 52% increase in total U.S. population (Florida and Texas have seen the greatest increases)
- Population density=184 persons per square mile compared to U.S. population density of 104 per square mile (excluding Alaska and US Territories).
- 37% of the Gulf states' population lives in the Gulf Coast Region

* Sources: Gulf at a Glance, US Census Bureau



AT RISK POPULATION

- **17%** of the population in the Gulf Coast Region lives below the poverty level (compared to **13%** nationally)
- **14%** of the population within the Gulf coast Special Flood Hazard Area is living below the poverty level
- **20%** increase in the number of housing units in the Gulf Coast Region from 2000 to 2010. (compared to **14%** increase in US)

ECONOMY

- If the Gulf states were considered a country, it would rank 7th in global Gross Domestic Product
- The Gulf Coast Region contained 13 of the Nation's 20 leading ports for tonnage in 2009
- In 2009, 3 of the top 6 commercial fishing ports in the US by pounds landed were in the Gulf Coast Region
- In 2009, the Gulf of Mexico accounted for over 44% of the US marine recreational fishing catch
- Oil and Gas
 - 54% of US total Crude Oil Production (based on avg. 2008-2010)
 - 52% of US total Natural Gas Production (based on avg. 2007-2009)
 - 47% of US total Crude Oil Refinery Capacity (based on avg. 2008-2010)

ECOSYSTEMS

- **31% of the Gulf of Mexico coastal watershed area is comprised of wetlands (28,372 square miles)**
- **108 square miles of wetlands lost to development between 1996-2006**
- **Over 15,000 species are found in the Gulf of Mexico waters**
- **Over 331 nonindigenous aquatic species have been found in the Gulf Coast Region**
- **59% of the US Gulf of Mexico shoreline is considered very vulnerable to Sea Level Rise**

BOTTOM LINE

- Coastal Communities are vulnerable and valuable
- Ecosystems, Communities, and Economy affect one another
- We need to give attention to all 3 areas if:
 - We want safe and robust populations living in coastal areas
 - We want sustainable natural resources for economic development
 - We want sustainable development and enjoyment of a healthy coastal environment
- Disasters and climate change have significant impacts on all 3 areas

AUDIENCE POLL

**HOW ARE COMMUNITIES
RECEIVING THE
MESSAGE?**

**They are
hearing
IMPACTS**

HOW WILL THIS AFFECT ME?



MENTAL MODELS OF CLIMATE CHANGE



RELATE DIRECTLY TO WHAT THEY KNOW

- Hurricanes
- Sea Level Rise
- Storm Surge
- Stormwater Management
- Heavy Precipitation
- Growing Season on Seed Packets
- Local Landmarks/Favorite Fishing Spots

SOLUTIONS THEY CAN ACT UPON

- **Planting Living Shorelines**
-habitat preservation and wetland restoration
- **Minimize hard shoreline protection**
-maintain sediment transport and restore protective wetlands
- **Beach renourishment**
- **Build permanent structures with additional freeboard height above NFIP BFE; Coastal Code Supplement**
- **Preserve biodiversity of waterfront vegetation**
-invasive species management, better water quality

**WHAT INCENTIVE DO
THEY HAVE FOR TAKING
ACTION?**

They hear
insurance
SAVINGS

NFIP AND THE CRS



National Flood Insurance Program
Community Rating System

Coordinator's Manual

April 6, 2012

DRAFT



LOCAL EXAMPLES

OUR CURRENT PLAN
TO PROTECT OURSELVES
FROM RISING SEA LEVELS.

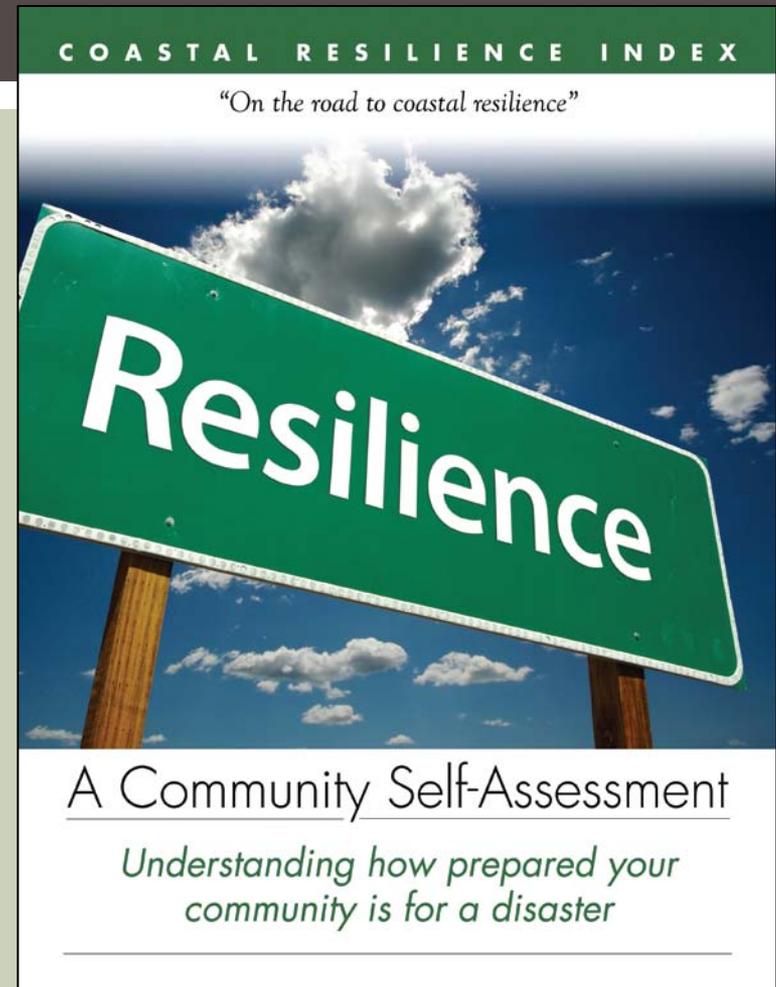


**HOW ARE COMMUNITIES
ADAPTING?**

**They are
using
TOOLS**

RESILIENCE INDEX

- <http://masgc.org/ri>
- Self-assessment completed by local decision makers to identify community's resilience to coastal hazards
- Implementation and evaluation portion of the project began fall 2010
- 39 communities have completed the CRI (from all Gulf states)



**Orange Beach,
AL**



Mental Models

VCAPS

**Implementation
of Action Item**

Biloxi, MS



Applied for RFP

**Public
Outreach
Campaign**



**Hazard
Mitigation
Planning**

Mandeville, LA



**Workshop Series
on Climate**

**Sea Level Rise
Planning
Draft of Policy
Language**

**Business
Continuity**

Ingleside, TX



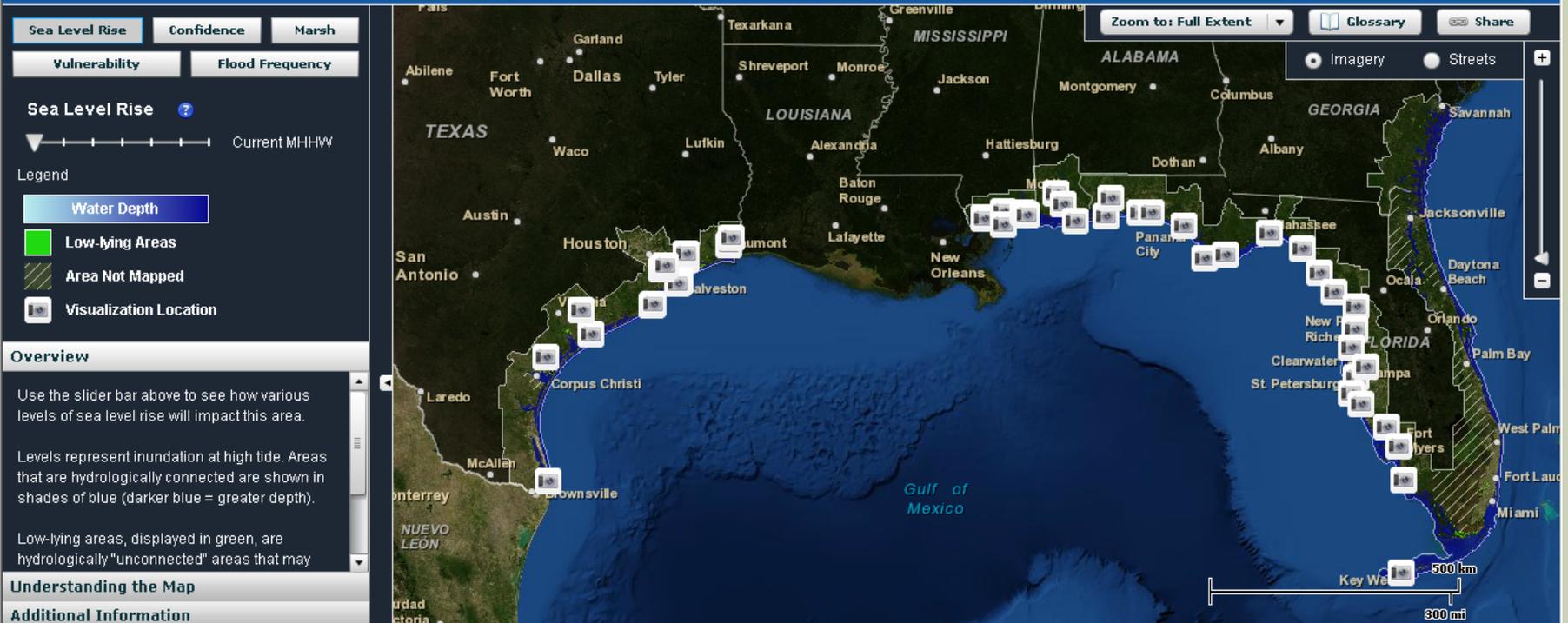
**CRS
Workshop**

CHARM

VISUALIZATION TOOLS

Sea Level Rise and Coastal Flooding Impacts

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

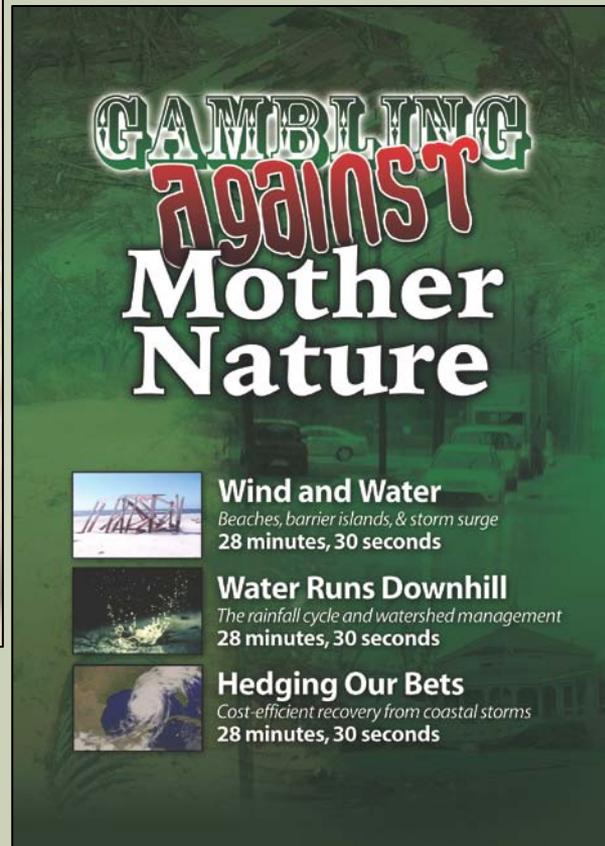
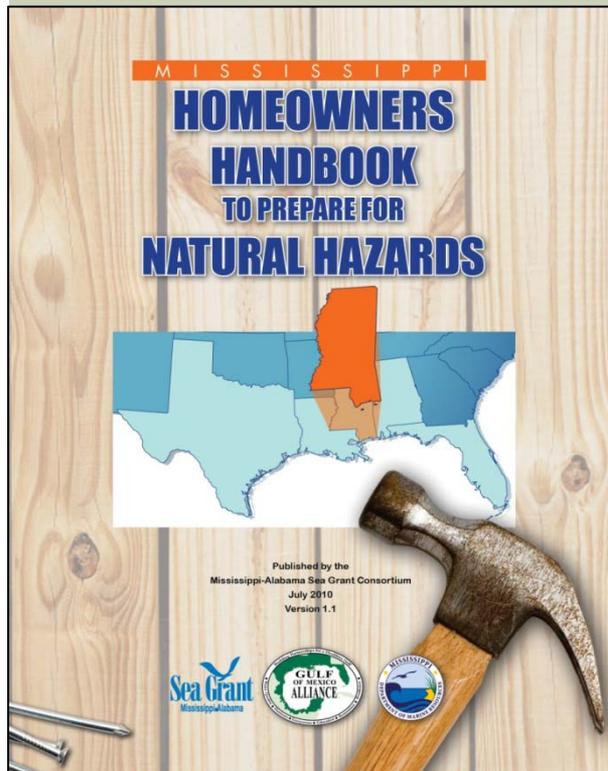


<http://www.csc.noaa.gov/digitalcoast/tools/slviewer/index.html>

CHARM: COMMUNITY HEALTH AND RESOURCE MANAGEMENT



INDIVIDUAL PREPAREDNESS

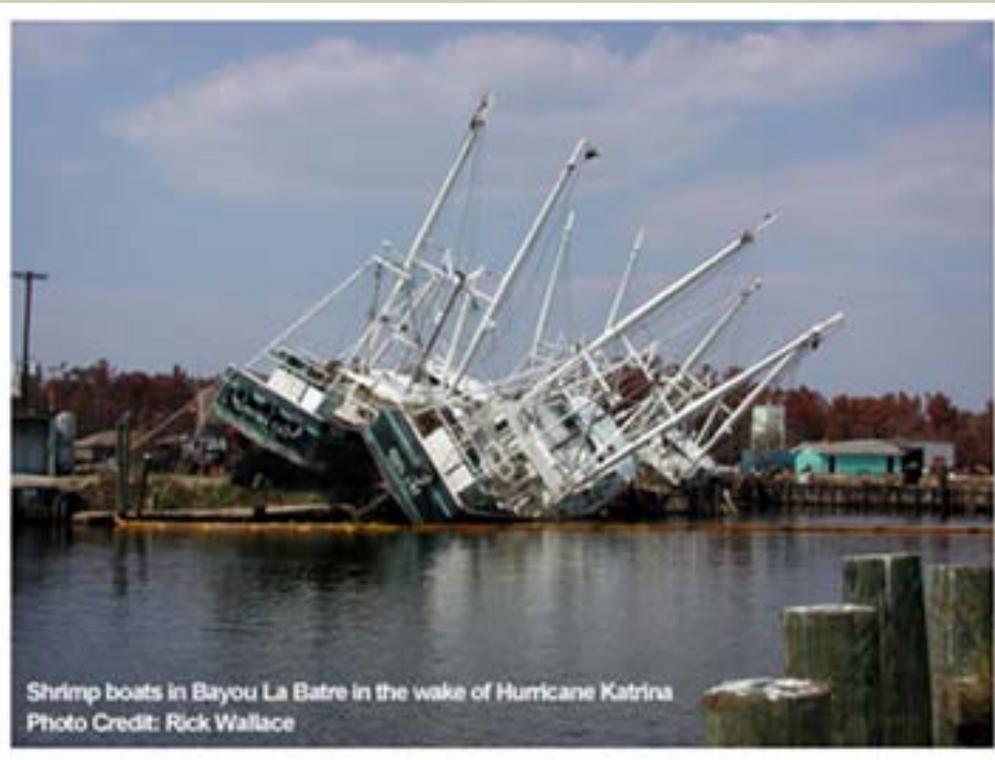


CLIMATE COMMUNITY OF PRACTICE



RESILIENT MARINAS

- Climate Adaptation and Sea Level Rise Section
- Checklist for marina operators, supplement to the existing Clean Marinas program



STORMSMART COASTS

The screenshot shows a Mozilla Firefox browser window displaying the StormSmart Coasts website. The browser's address bar shows the URL <http://ms.stormsmart.org/>. The website header features the StormSmart Coasts logo, a search bar, and a navigation menu with tabs for Home, Before the Storm, During the Storm, After the Storm, Funding, and StormSmart Connect. Below the navigation menu, there are links for About Us, Community Rating System (CRS) Primer, No Adverse Impact (NAI), and Legal Introduction. The main content area includes a featured article titled "Funding+Permits=Nourishment? Not So Fast." with a "Read More" button. To the right of the article are three additional article teasers: "Check out the New and Improved Coastal Community Resilience Index", "No Budget? No Problem. Group Makes Hurricane Safety PSAs on a Shoestring Budget", and "New Tool: Coastal CHARM". Below these teasers is a "Contact Us" button. The website also has a section for "Before the Storm", "During the Storm", "After the Storm", and "Funding", each with a brief description and a "Learn More" link. At the bottom, there is a "Latest News" section with a headline "Hurricane-Threatened Community Not Giving Up" and a "Please Join Us!" section with a "Create an Account (easy!)" button and a login form with fields for "Username" and "Password".

StormSmart Coasts
Mississippi (Other States)

Search StormSmart GO

Home Before the Storm During the Storm After the Storm Funding StormSmart Connect

About Us Community Rating System (CRS) Primer No Adverse Impact (NAI) Legal Introduction

Funding+Permits=Nourishment?
Not So Fast.
Read More

Check out the New and Improved Coastal Community Resilience Index

No Budget? No Problem. Group Makes Hurricane Safety PSAs on a Shoestring Budget

New Tool: Coastal CHARM

Even With Money and Permits, Beach Nourishment Isn't Always Possible

Great New Publication on Elevating Existing Homes

Contact Us

Before the Storm
Preparing Your Community
Learn what steps your community can take to help prepare for storms.
[Learn More](#)

During the Storm
Emergency Contacts
A storm is on top of you: do you know who to call, and where to get the latest information?
[Learn More](#)

After the Storm
Safe & Smart Recovery
How to rebuild and recover as quickly and safely as possible.
[Learn More](#)

Funding
Where to Find Help
Some of your priorities are going to be both critical and costly. Luckily, there's funding out there: we've gathered it.
[Learn More](#)

Latest News
Posted on October 3, 2012

Hurricane-Threatened Community Not Giving Up

"People want to talk about how things are deteriorating here, but what I am interested in is restoration. Why talk about how bad it is? We can do something about it."

Please Join Us!
Create an Account (easy!)

Or Log In:
Username
Password

HOW ARE COMMUNITIES ADAPTING?

They are
collecting
DATA and
conducting
OUTREACH

SEA LEVEL RISE PLANNING

- Waveland, MS Hancock County
- Biloxi, MS Harrison County
- Ocean Springs, MS Jackson County



WAVELAND, MS



The Hospitality City

- Better understanding of implications of climate change and resulting sea level rise/storm surge
- Part of the initial Hazard Mitigation Planning Process
- Assist the city in maximizing its credits under the National Flood Insurance Program.

WAVELAND DELIVERABLES

- Summary of the Best Available Climate Change Science
- Analyze Climate Change Impacts to the City of Waveland (create maps that model local impacts)
- Inventory Capabilities for Adaptation (what is the city's current adaptive capacity?)
- Develop Mitigation Plans and Actions (prioritize where to focus resources based on identified impacts)
- Public Involvement (coordinated with HMP updates; hold public outreach meetings, information on websites)
- Implementation and Maintenance (schedule for implementing and monitoring the identified mitigation strategies)

BILOXI, MS



- Improve the understanding of City officials, employees and the community about local and regional climate change issues; begin the process of identifying how Biloxi can adapt to minimize damage to both the manmade and natural environments;
- Identify climate adaptation recommendations to be considered for inclusion in Biloxi's 2012 Hazard Mitigation Plan and in other plans, policies and codes;
- Educate the public about the benefit(s) of a proposed requirement for one foot of freeboard above sea level (in anticipation of projected sea level rise, increased storm surge and more frequent upland flood events); and
- Identify ways the City can cope with increased flooding, in terms of planning future stormwater improvements and/or retrofitting existing stormwater management BMPs (such as promoting use of rain gardens and pervious paving material).

BILOXI DELIVERABLES

- Two public meetings (one in East Biloxi and one in West Biloxi)
- Hazard awareness information booth the City hosts at Edgewater Mall for 2-3 consecutive days each May (before the start of hurricane season).
- A City Council workshop that the public will be invited to attend.
- A new section in the Biloxi all-hazards annual mail out to each Biloxi water/sewer service customer.
- A link on the City's website and regular B-Mail information updates.
- The City of Biloxi's 2012 Hazard Mitigation Plan will be developed as an all-hazard mitigation strategy, incorporating the climate-adaptation recommendations developed through the public information phase of the planning project, and will include well-defined goals, objectives and actions.

OCEAN SPRINGS, MS



- Establish sea level rise scenarios for the City of Ocean Springs
- Examine location of critical facilities and infrastructure in relation to sea level rise
- Analyze existing data to determine likely changes in sea level & timing of those changes
- Map potential Sea Level Rise

OCEAN SPRINGS DELIVERABLES

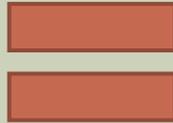
- Maps of sea level rise scenarios (timeline depending on timing of potential impact)
- Overlay Map of sea level rise and critical infrastructure
- Report on likely outcomes with recommendations for mitigation actions for sea level rise

HOW ARE COMMUNITIES ADAPTING?

They are
mitigating
their RISK

COST-BENEFIT

- Resilience Planning=Benefits
- \$1 spent in mitigation= \$4 in future benefits



HOW WILL WE ADAPT IN THE FUTURE?



QUESTIONS?

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Find me on StormSmart Connect

