



Building Coastal Resilience Across the Gulf Community by Community

October 2013

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The Nature Conservancy



Mission of The Nature Conservancy

**Protecting nature, for
people today and future
generations.**

Topics to Be Covered

- Coastal Resilience Approach
- Geographies
- Our Work in the Gulf of Mexico
- Our Work at the Estuary Level



Coastal Resilience

Website is coastalresilience.org

COASTAL RESILIENCE

Adapting Natural and Human Communities to Sea Level Rise and Coastal Hazards

APPROACH

SCIENCE

GEOGRAPHIES

RESOURCES

TOOLS



October 2013

New tools for Coastal Resilience

October 7, 2013

Check out our new blog!



Coastal Resilience 2.0

Today we announce the release of Coastal Resilience 2.0; a suite of tools that enables decision-makers to assess risk and identify nature-based solutions to reduce socio-economic vulnerability to coastal hazards. These tools, available at maps.coastalresilience.org, allow you to interactively examine storm surge; sea level rise; natural resources; vulnerable communities and assets and to develop risk reduction and restoration solutions.

Since the first release of Coastal Resilience tools in 2008, they have been used to reduce risk to people and the environment across the USA and globally. Coastal Resilience 2.0 will

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Building Coastal Resilience

for Disaster Risk Reduction and Climate Adaptation

Healthy or restored natural systems can help reduce the human vulnerability and economic losses from current and growing

The Nature Conservancy



Protecting nature. Preserving life.™

Coastal Resilience

Building and Protecting Natural Defenses



Coastal Resilience Many Geographies

Geographies

The Coastal Resilience network supports a community of practitioners around the world who are applying planning innovations to coastal hazard and adaptation issues. The network provides access to peer practitioners, tools, information and training focused on nature-based solutions in a consistent and cost effective manner.



The coastlines of Long Island Sound, Peconic Bay and the south shore of...

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Florida, Mississippi, Alabama, Louisiana and Texas are using Coastal...

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Small island states, like those of the Caribbean, are among the Earth's...

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The sea created the Florida Keys and now it is taking them back.

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...

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The Nature Conservancy is working with national and local governments...

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Coastal Resilience Gulf of California focuses on determining the...

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Strategic investments in both built or grey infrastructure and natural...

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This project demonstrates

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GEOGRAPHIES

- New York and Connecticut
- Gulf of Mexico
- Ventura County
- Florida Keys
- Grenada and St. Vincent and the Grenadines
- MesoAmerican Reef
- U.S Virgin Islands
- Puget Sound
- Gulf of California**

Explore the Coastal Resilience Network web application



Website: www.coastalresilience.org

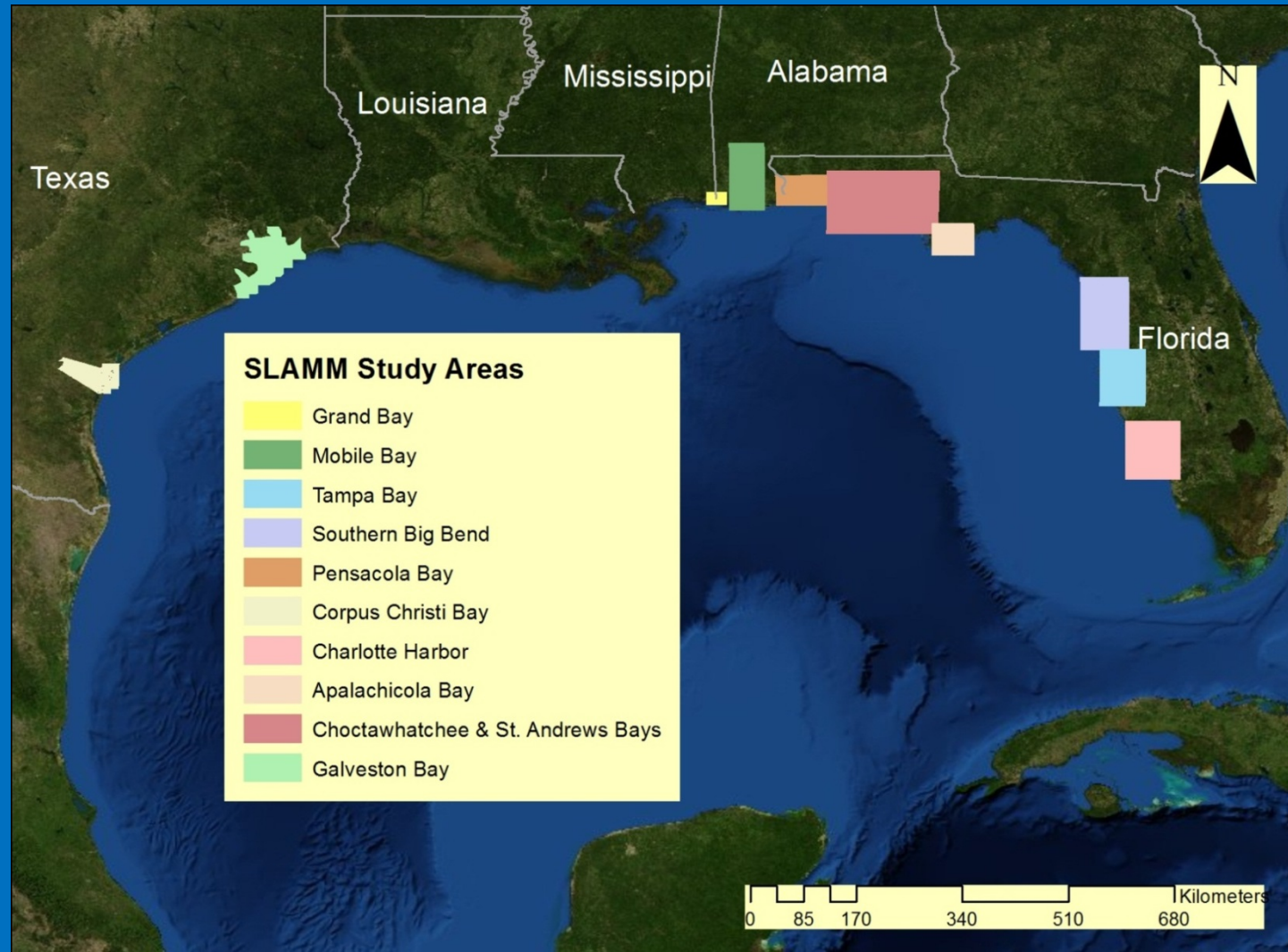
Coastal Resilience in the Gulf of Mexico

Modeled Effects of Sea Level Rise on Coastal Habitats

10 Study Areas;
 3 SLR scenarios:
 0.7 m, 1 m & 2 m

Potential future impacts on coastal habitats, dependent species and human communities.

Workshops with community members to develop adaptation strategies





Coastal Resilience Tools

COASTAL RESILIENCE

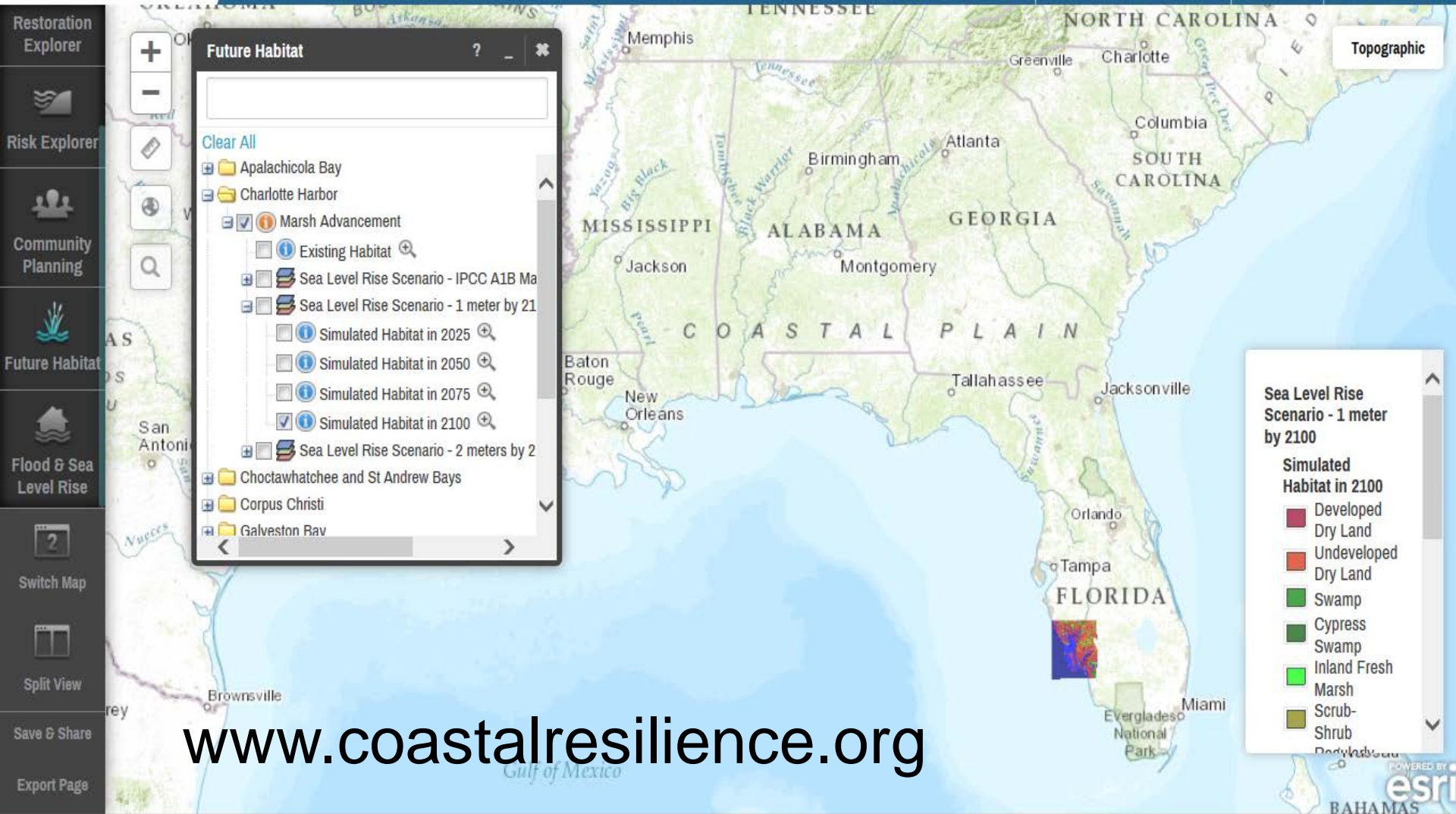
GULF OF MEXICO

GET STARTED

The Nature Conservancy

Partners

Legal Disclosure

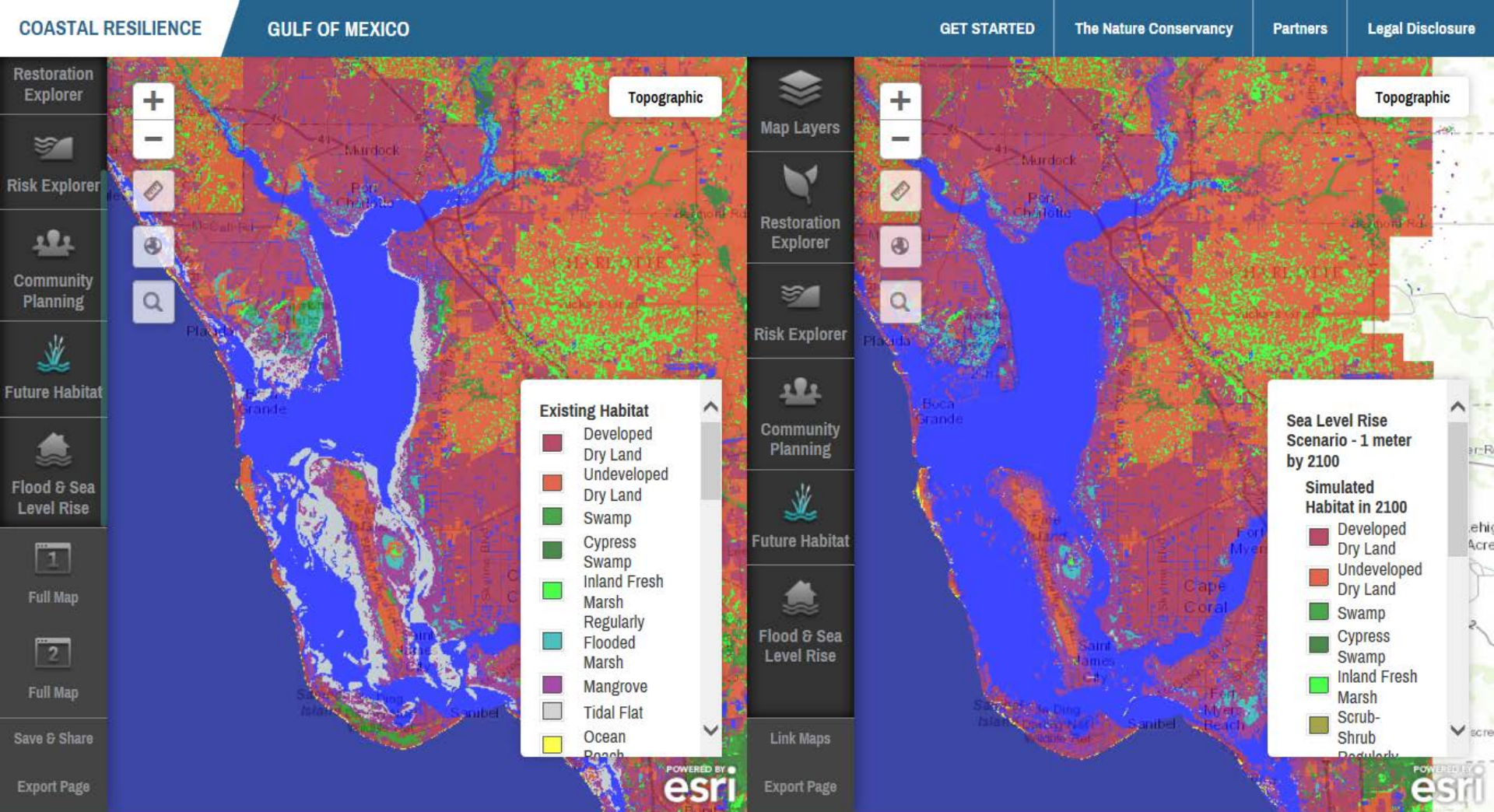


www.coastalresilience.org

Charlotte Harbor: Modeling of Sea Level Rise Impacts on Coastal Habitats

Current Conditions

Year 2100 under 1 m SLR





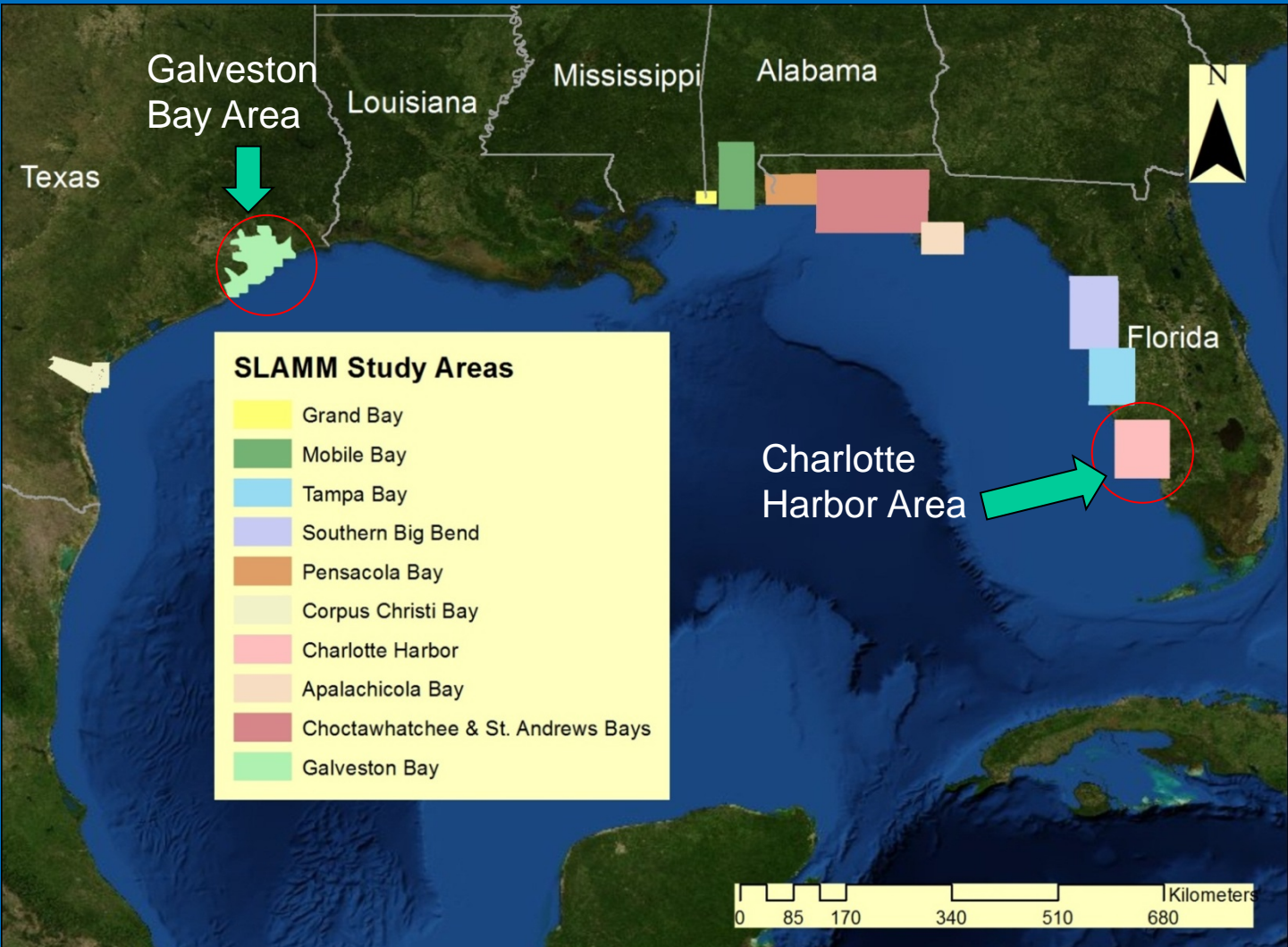
Stakeholder Workshops

Development of Locally Relevant Adaptation Strategies





Communities Selected to “Go Deeper”



Community Planning Tool on CoastalResilience.org

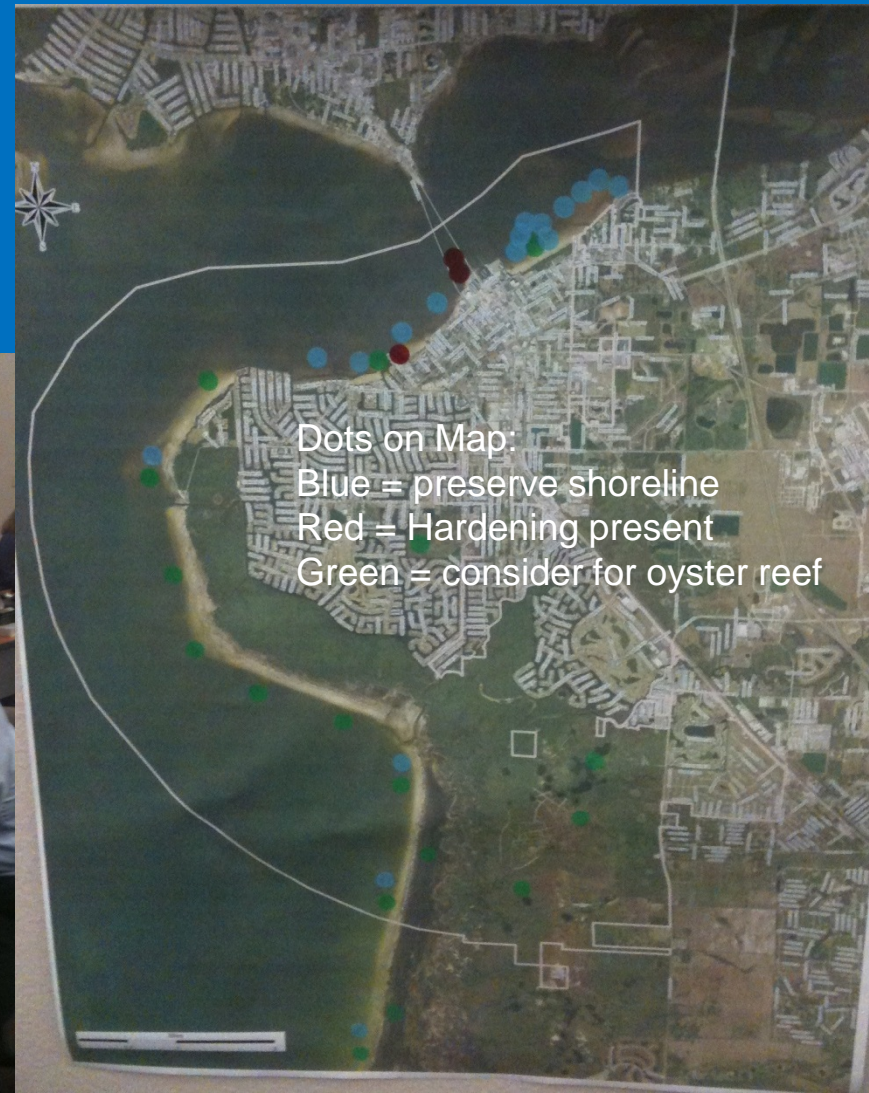
The screenshot displays the web interface of the Coastal Resilience Community Planning Tool. The browser address bar shows the URL maps.coastalresilience.org/gulfmex/. The page header includes navigation links: COASTAL RESILIENCE, GULF OF MEXICO, GET STARTED, The Nature Conservancy, Partners, and Legal Disclosure. On the left side, there is a vertical toolbar with icons for Map Layers, Restoration Explorer, Risk Explorer, Community Planning, and Future Habitat. The main map area shows a coastal region with various colored overlays representing different habitats and boundaries. A 'Community Planning' panel is open on the left, containing a 'Filter Map Layers' section with a 'Clear All' button and a list of layers with checkboxes. The layers include: Habitats (Mangrove, Future Mangrove area, Oyster reefs, Saltwater Marsh, Submerged Aquatic Vegetation, Intertidal Sand Bar, Intertidal Mud Flat, Oyster RSM Results) and Boundaries (Punta Gorda City limits, Census Block Groups - Clipped, Census Block Groups, Charlotte County parcels). A legend in the bottom right corner identifies the colors for 'Mangrove' (green) and 'Future Mangrove area' (orange). The map shows cities like Fort Myers, Cape Coral, and Sanibel, along with roads and water bodies. The bottom of the screen shows a Windows taskbar with various application icons and the system clock indicating 11:09 AM on 10/14/2013.

Where the community can go to plan and refine adaptation strategies



Punta Gorda Community Meeting on Coastal Resilience

- Familiarize with Coastal Resilience work in Charlotte Harbor and CR Tools
- Get input on City's proposed adaptation strategy to preserve some shorelines from hardening
- Identify promising locations for oyster reef restoration





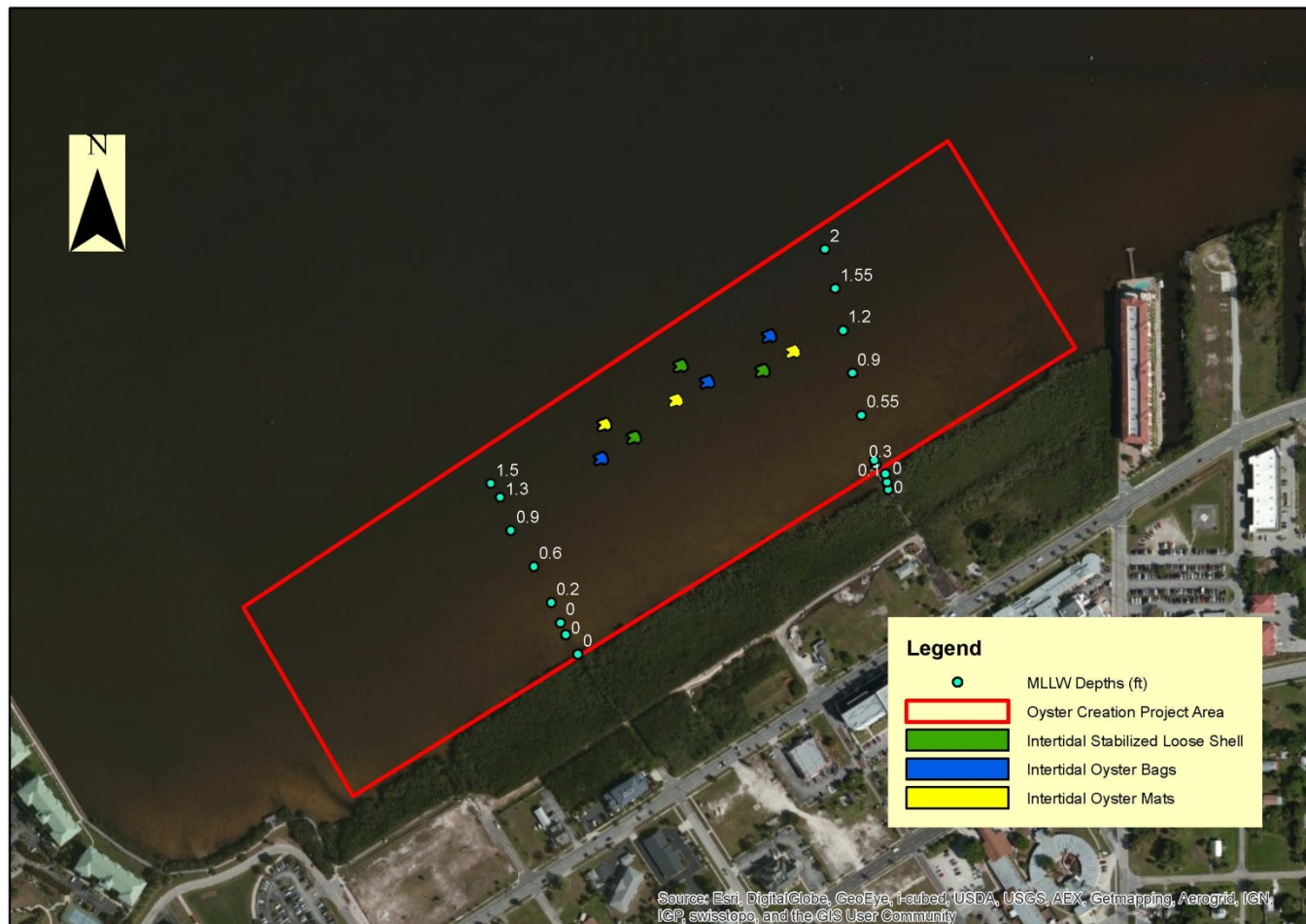
Conceptual Design Punta Gorda Oyster Reef Pilot Project



Purposes:

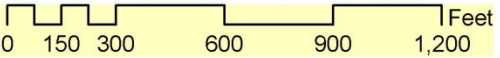
- Support vulnerable shoreline
- Begin to restore greatly reduced spatial extent of oyster reefs;
- Improve understanding of oyster reef in the system

Sheet 4: Trabue Harborwalk Oyster Habitat Creation - Conceptual Project Design Map - revised 10/7/2013



Source: Esri, DigitalGlobe, GeoEye, Earthstar, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Note: Each patch reef is approx. 0.020 acres (81 square meters).
Exact location of patch reefs will be determined based on a natural resources survey within the project area, and will be located in at least 1 ft. MLLW.





ReCap

- TNC has created an approach to support development and implementation of adaptation strategies for sea level rise and increased intensity coastal storms called **Coastal Resilience**.
- TNC's adaptation work focuses on nature based solutions for reducing the risk of sea level rise, storm surge and other coastal hazards.
- Coastal Resilience includes a suite of web-based mapping applications developed to support community decision-making.
- TNC is partnering with communities in many geographies to support development and implementation of adaptation strategies.