

Coastal Resilience 2.0

CoastalResilience.org

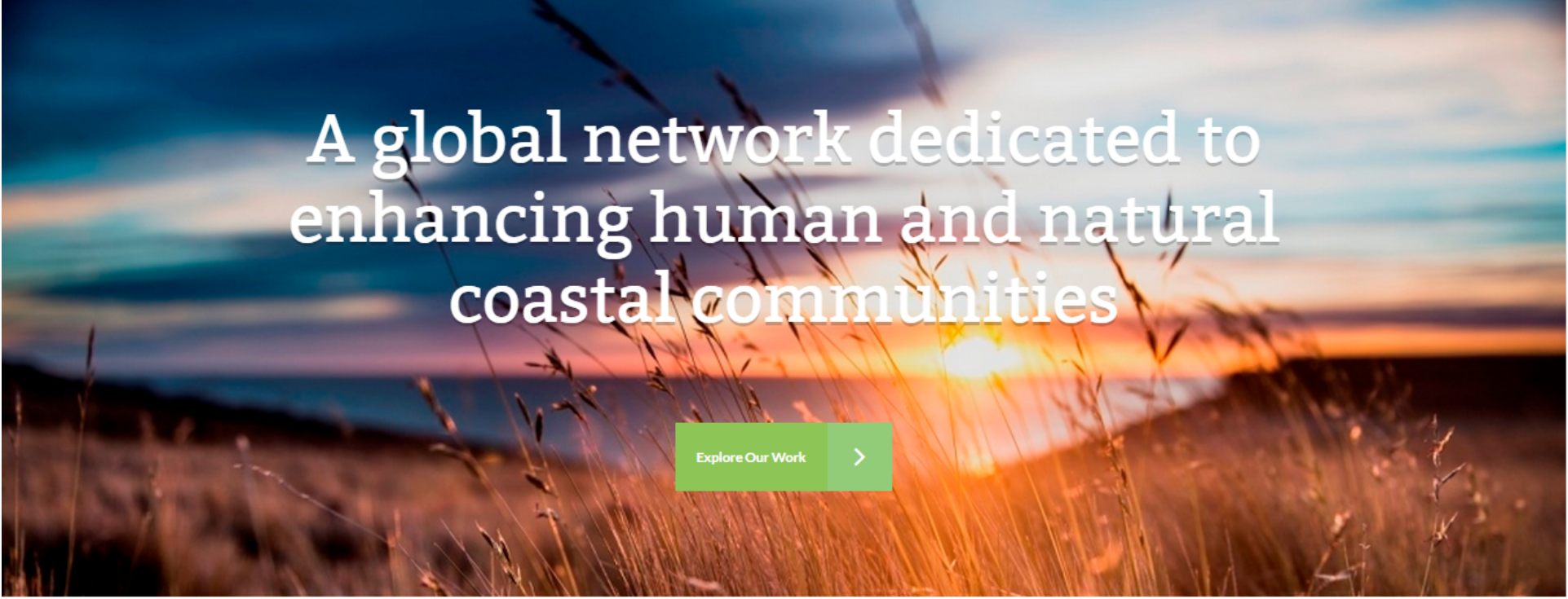
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Coastal Resilience

[OUR WORK](#) [OUR APPROACH](#) [RESOURCES](#) [TEAM & PARTNERS](#)



LAUNCH MAPPING PORTAL



A global network dedicated to
enhancing human and natural
coastal communities

Explore Our Work



Christine Shepard

The Nature Conservancy

cshepard@tnc.org

Approach and Network

Decision support tool platform

Apps

...that address disaster risk reduction using
nature-based solutions to coastal hazards
& climate change



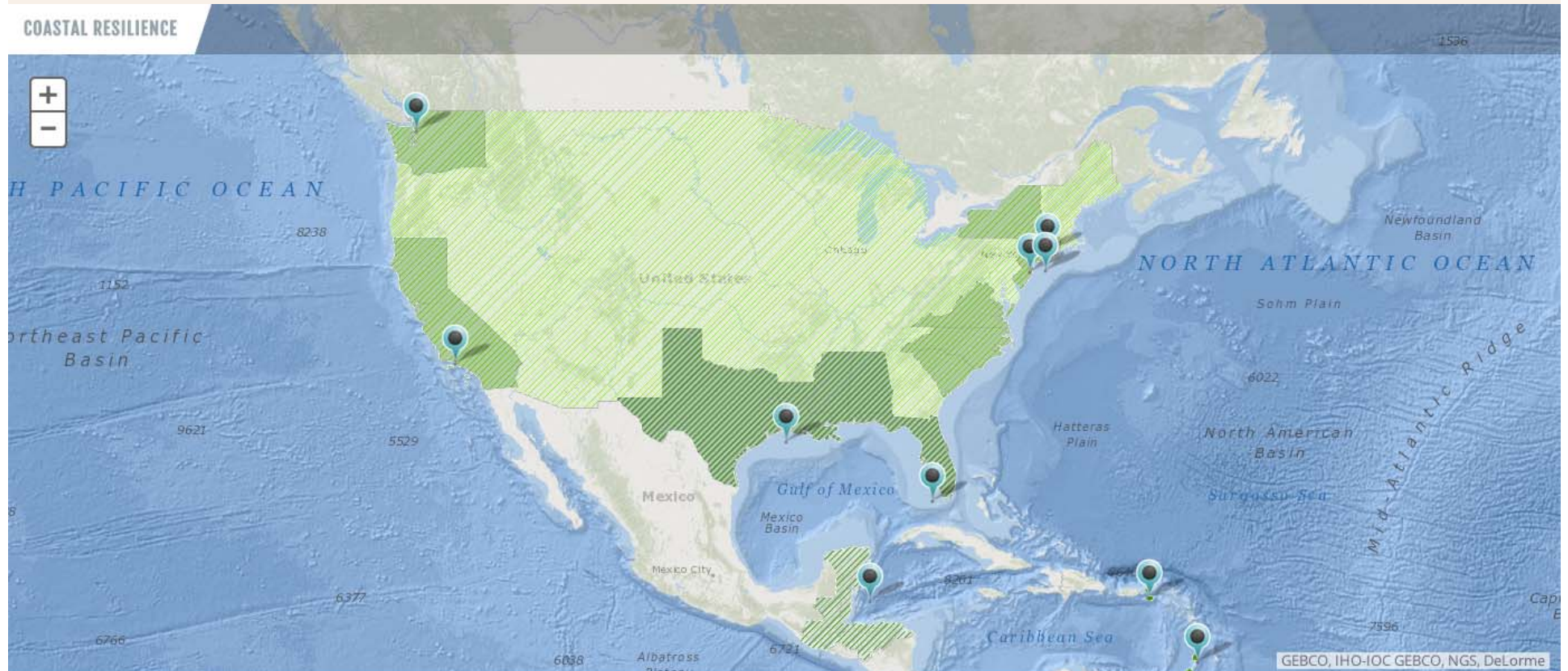
Coastal Resilience

Approach



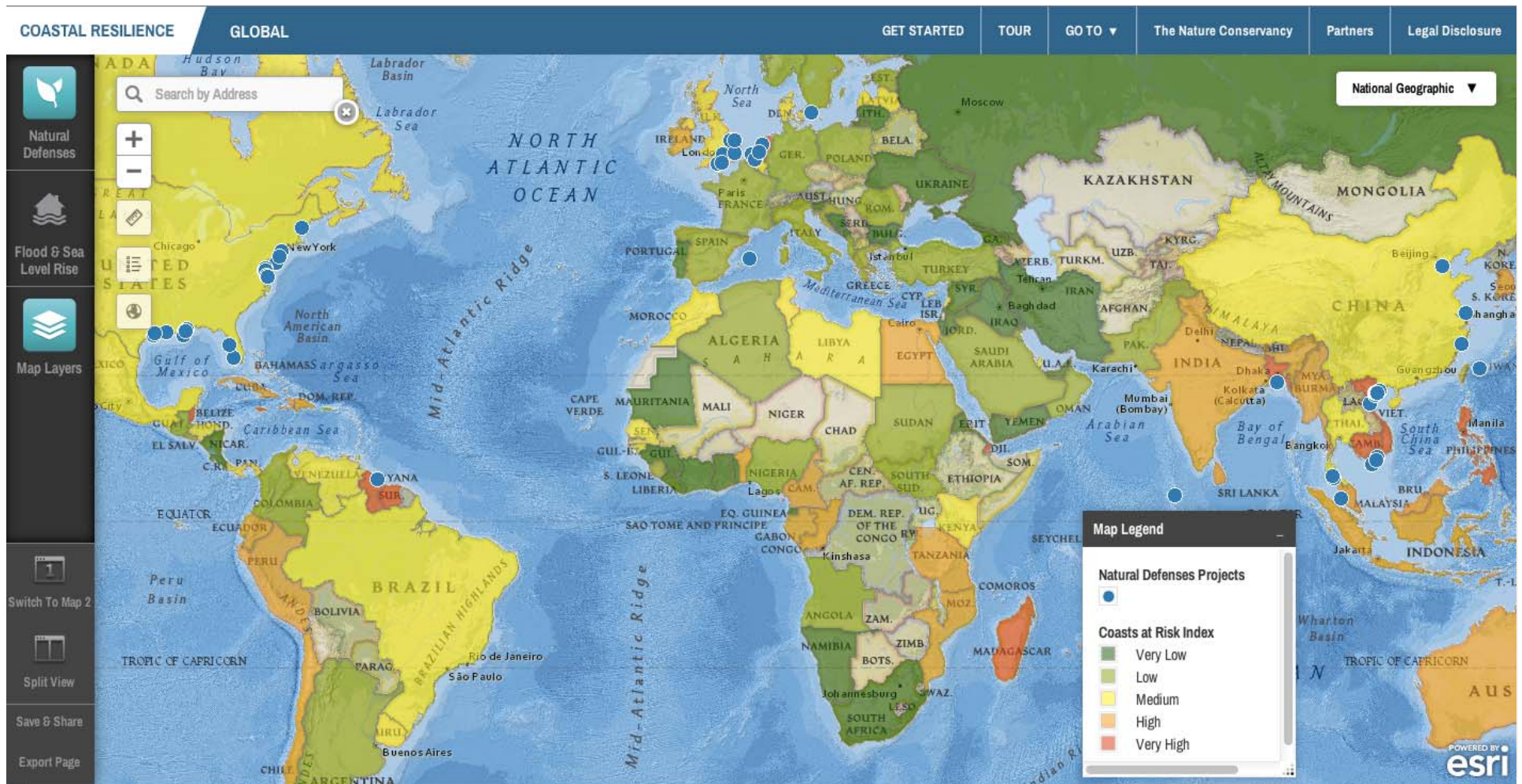
Coastal Resilience

Network



Coastal Resilience mapping portal

maps.coastalresilience.org

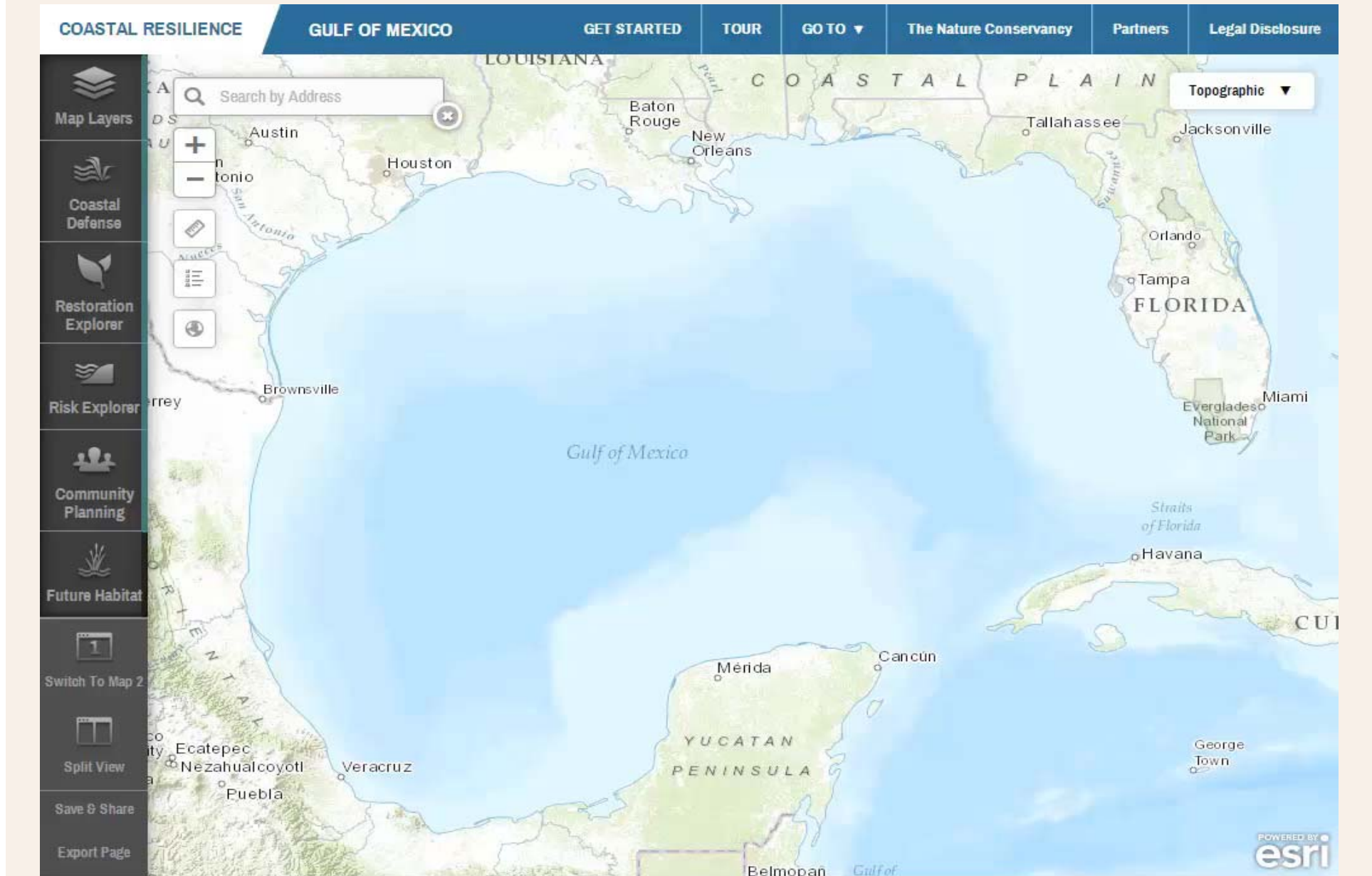


Mapping tool platform with apps



Coastal Resilience

Tool & Apps





Current coastal and floodplain inundation scenario

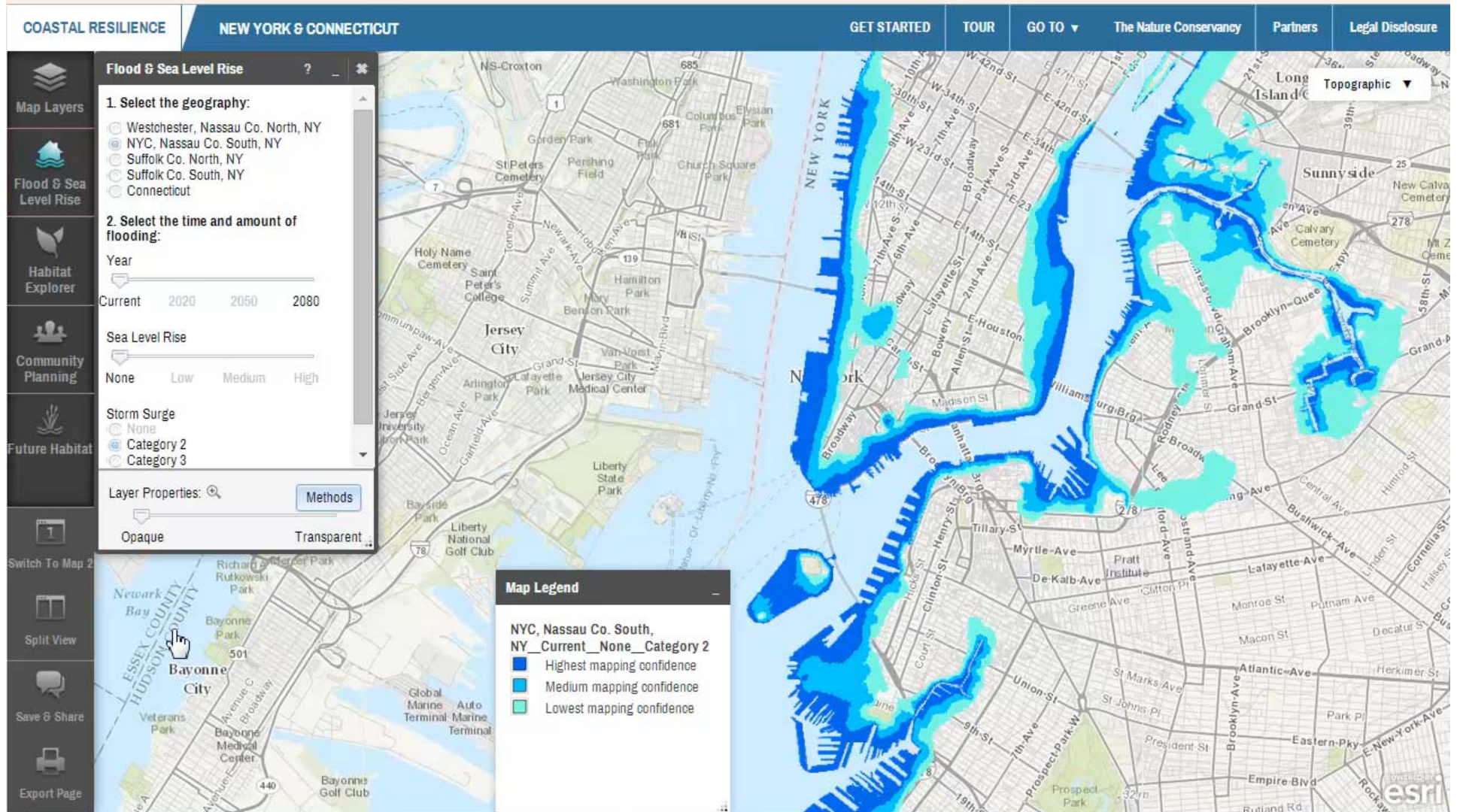


Future coastal and floodplain inundation scenario



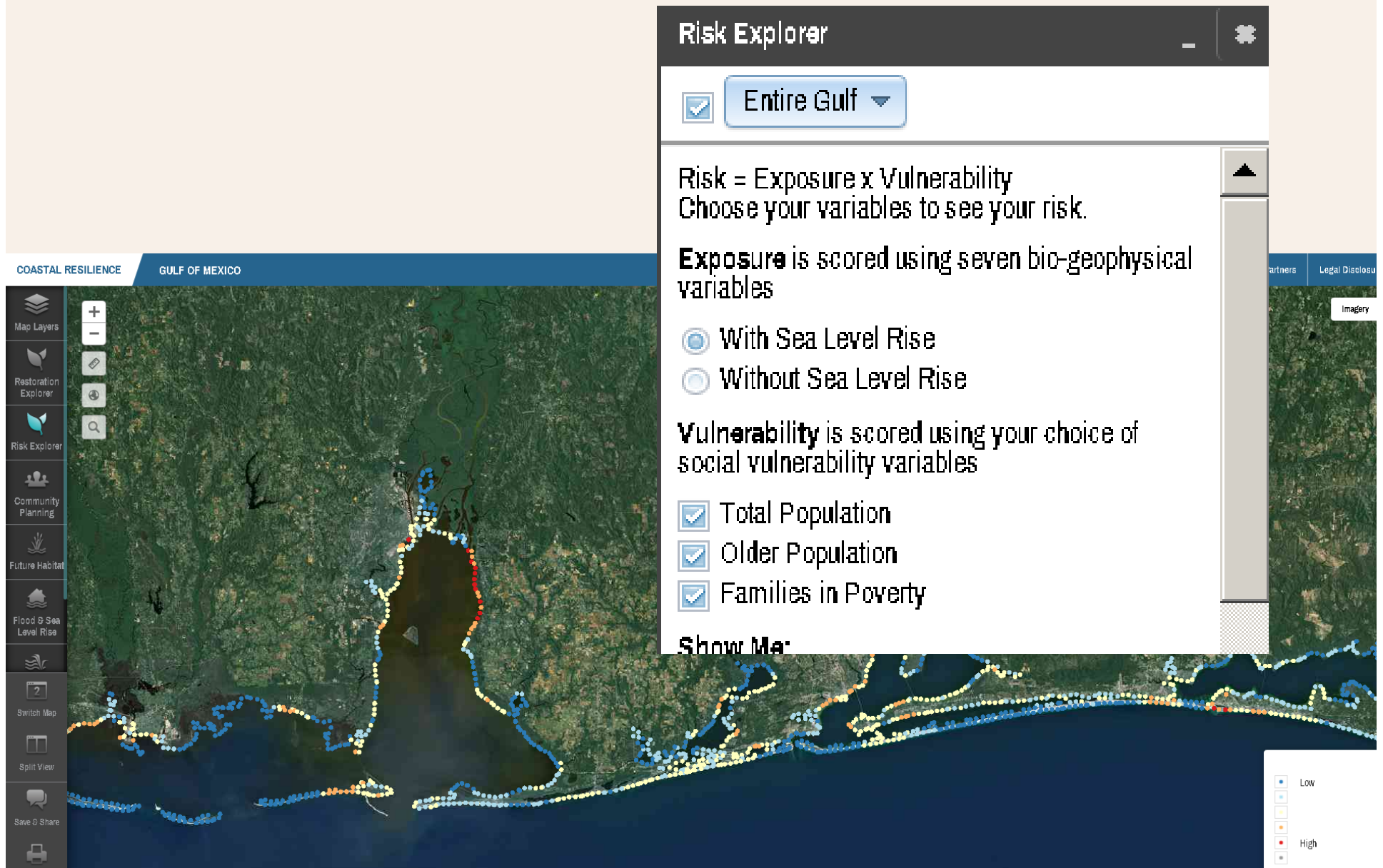
Coastal Resilience

Flood & Sea Level Rise app



Coastal Resilience

Risk Explorer app



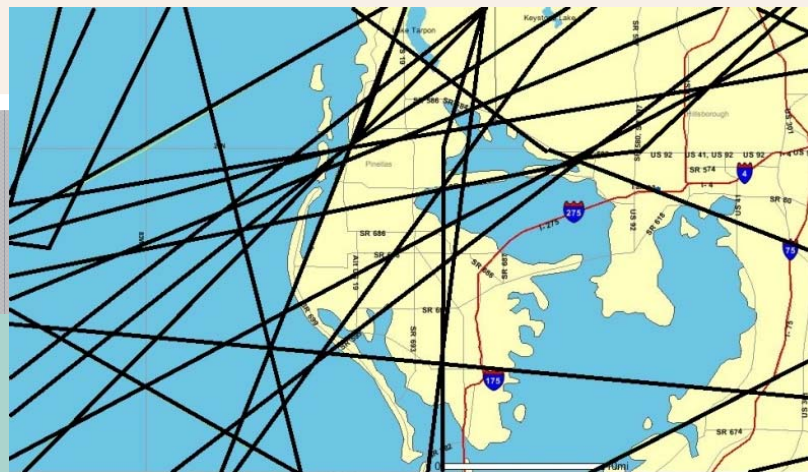
RISK= Exposure X Vulnerability



Hazard extent,
likelihood and/or
magnitude



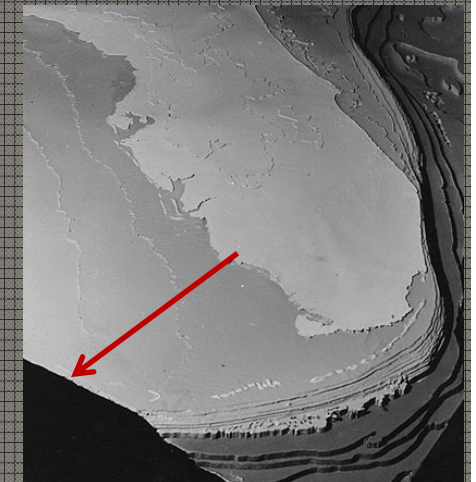
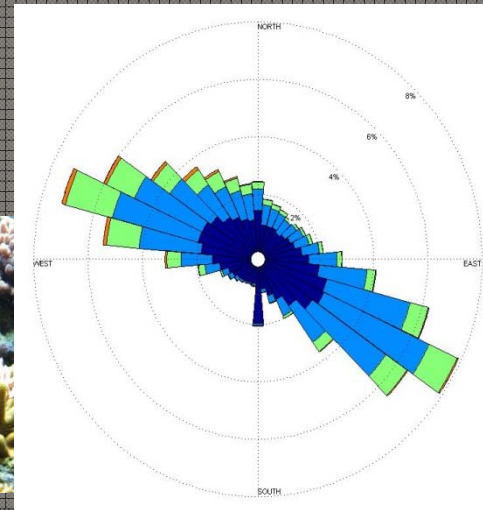
Social, ecological or
economic vulnerability
to hazards



Exposure Score based on 7 variables



Sandy Beach

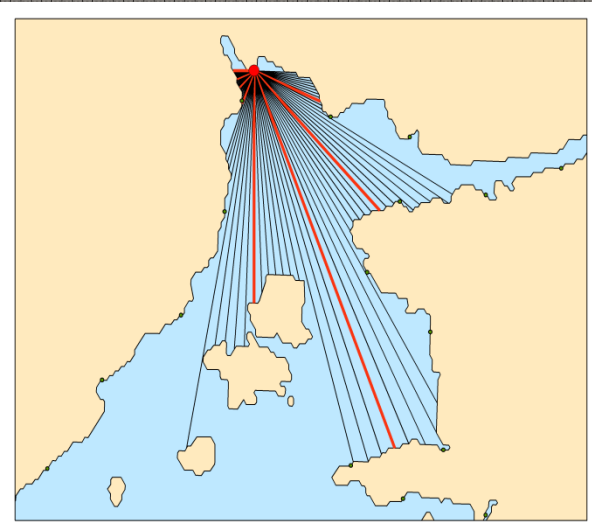


GEOMORPHOLOGY

COASTAL
HABITATS

WIND EXPOSURE

SURGE POTENTIAL



WAVE EXPOSURE

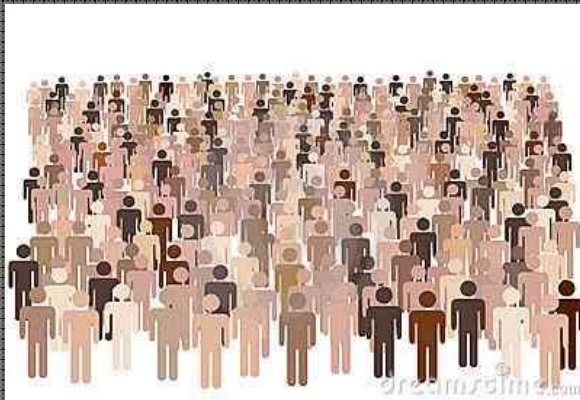


RELIEF



SEA LEVEL RISE

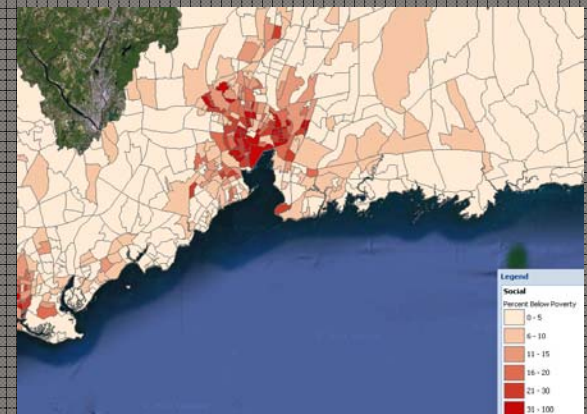
Vulnerability Score based on 3 variables



TOTAL POPULATION



**NUMBER OF
PEOPLE OVER
AGE 65**



**NUMBER OF FAMILIES
LIVING IN POVERTY**

Risk Explorer

COASTAL RESILIENCE

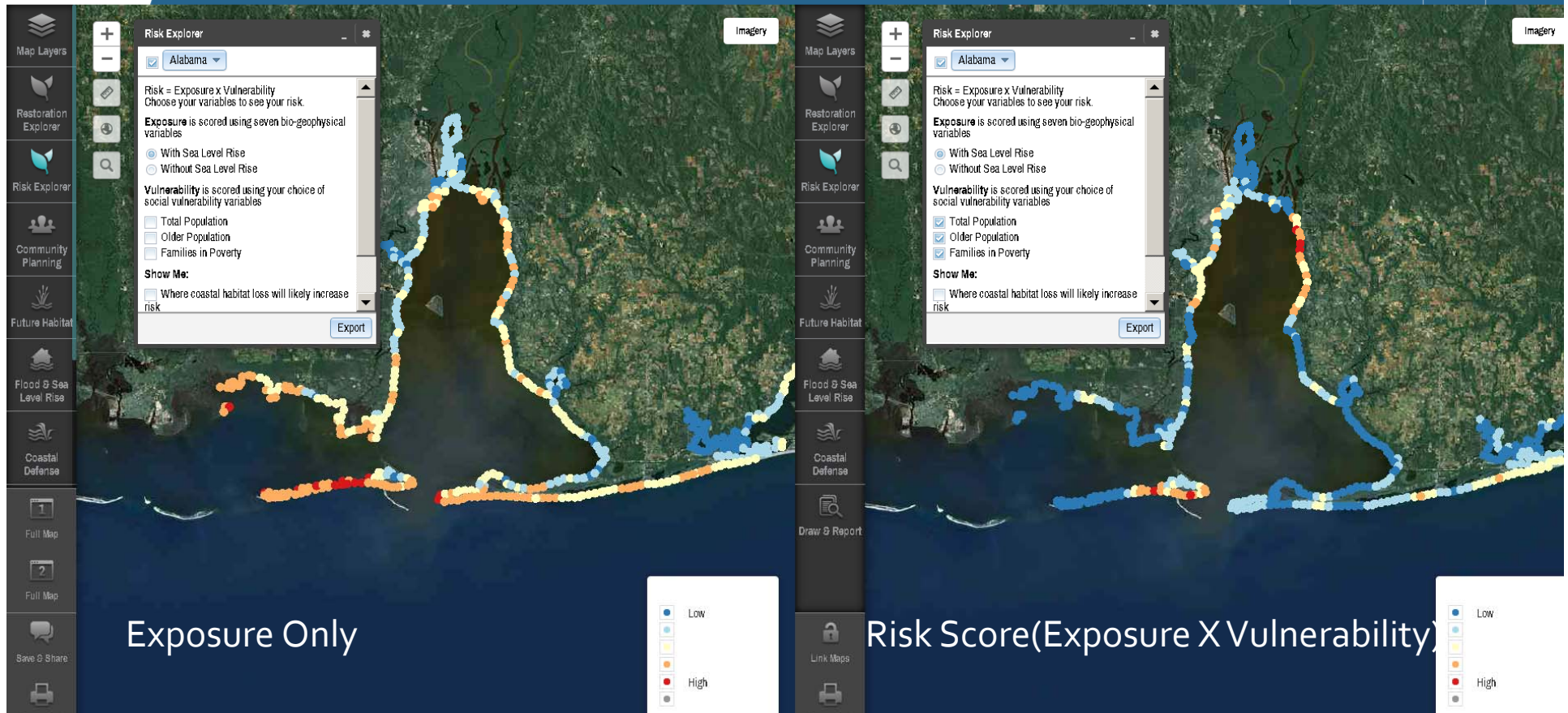
GULF OF MEXICO

GET STARTED

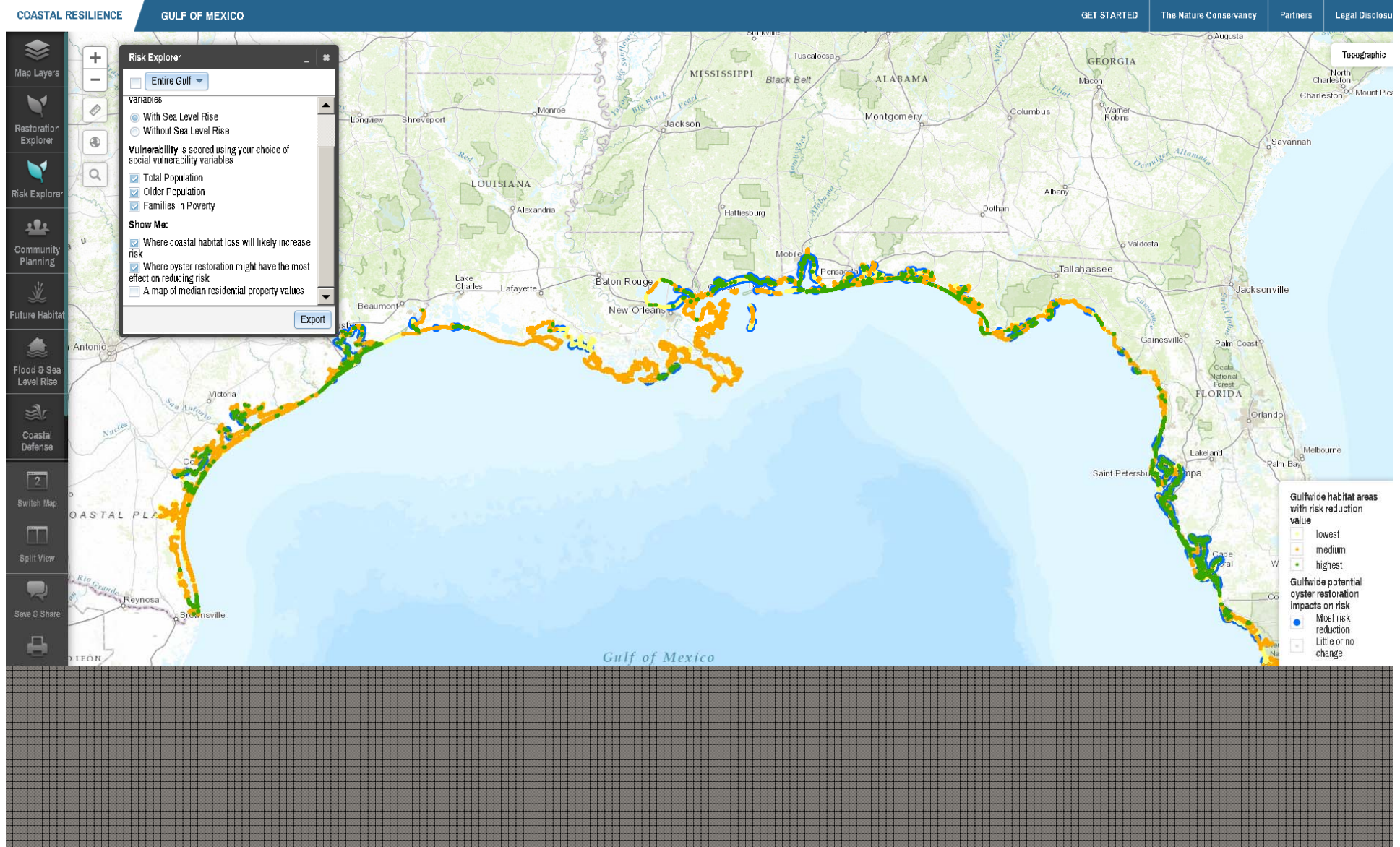
The Nature Conservancy

Partners

Legal Disclosu



Green areas are habitat areas with high risk reduction value
Blue areas are potential oyster restoration areas with risk reduction value

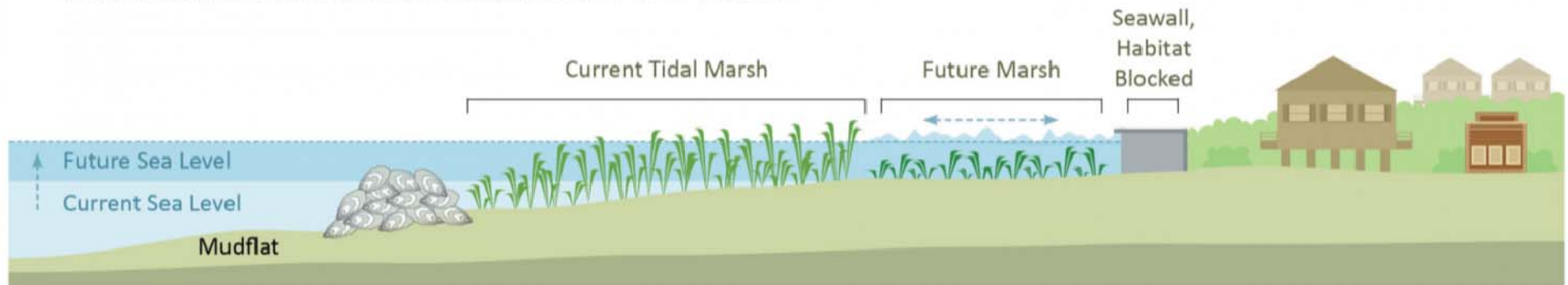


Coastal Resilience

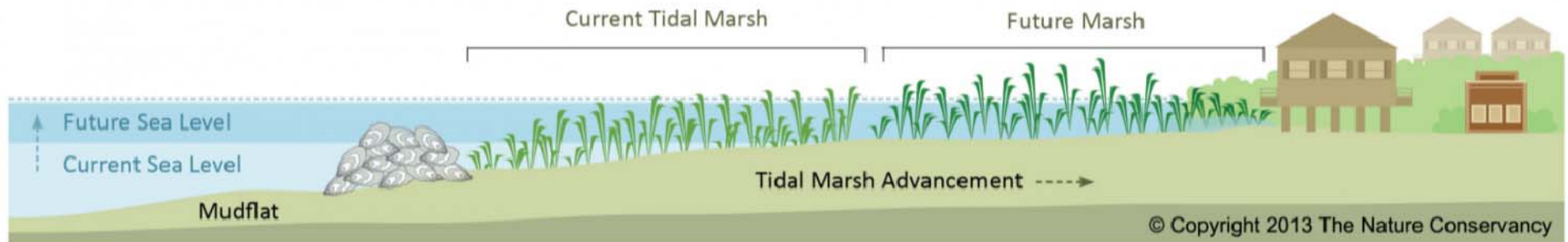
Future Habitat app



Vulnerable Habitat: Tidal Marsh advancement blocked as sea level rises



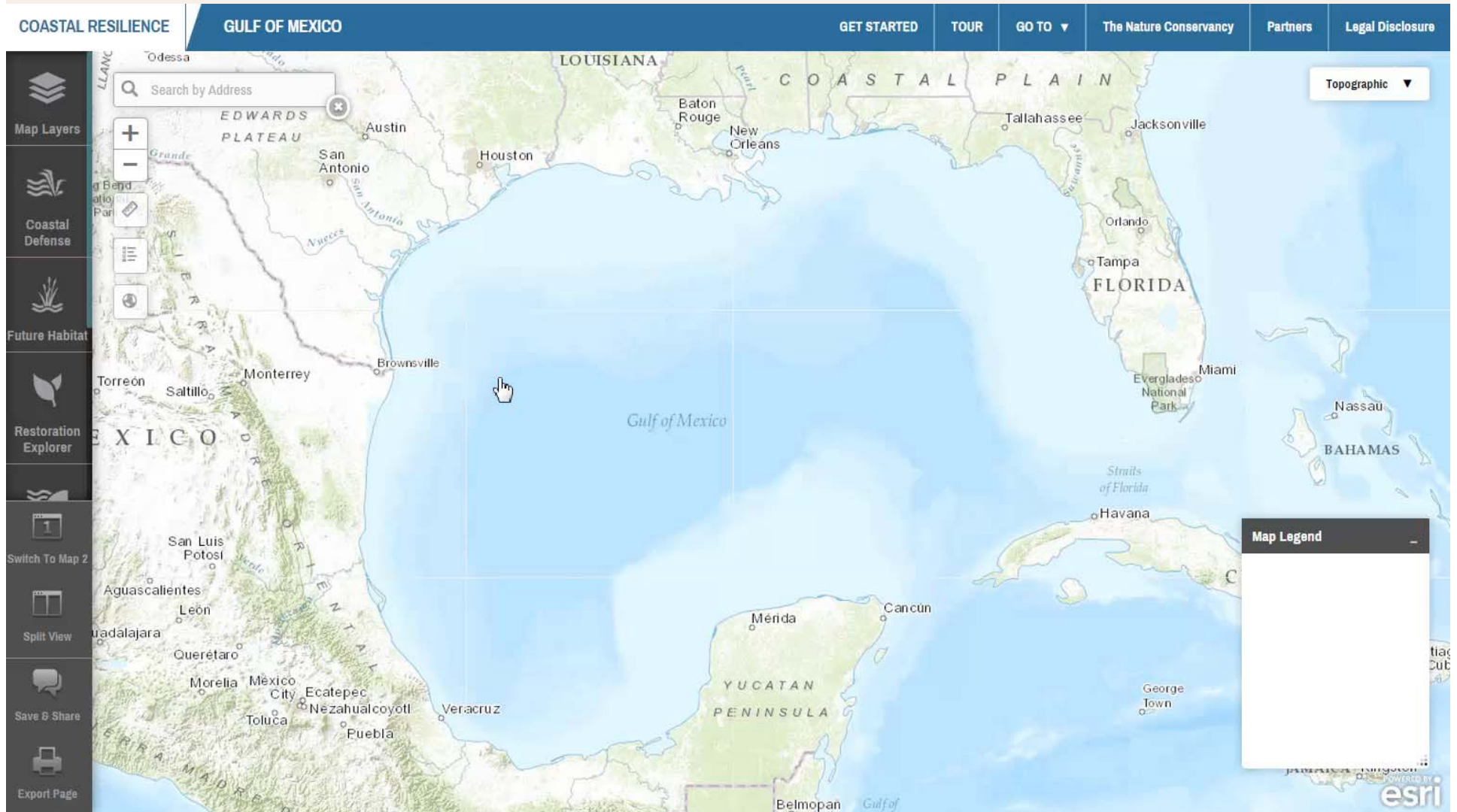
Resilient Habitat: Tidal marsh advances landward as sea level rises



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Coastal Resilience

Future Habitat app



Coastal Resilience

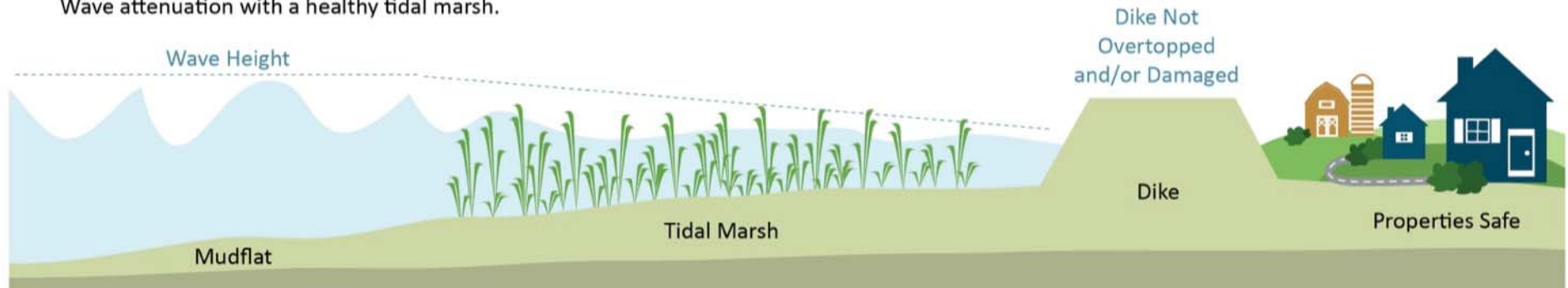
Coastal Defense app



Coastal Defense

Coastal Defense quantifies how natural habitats (oyster reefs, tidal marshes, seagrass ...) protect coastal areas by reducing wave-induced erosion and inundation. It uses standard engineering techniques to help you estimate how and where to restore or conserve critical habitat, and increase the resilience of your coastal community and infrastructure.

Wave attenuation with a healthy tidal marsh.

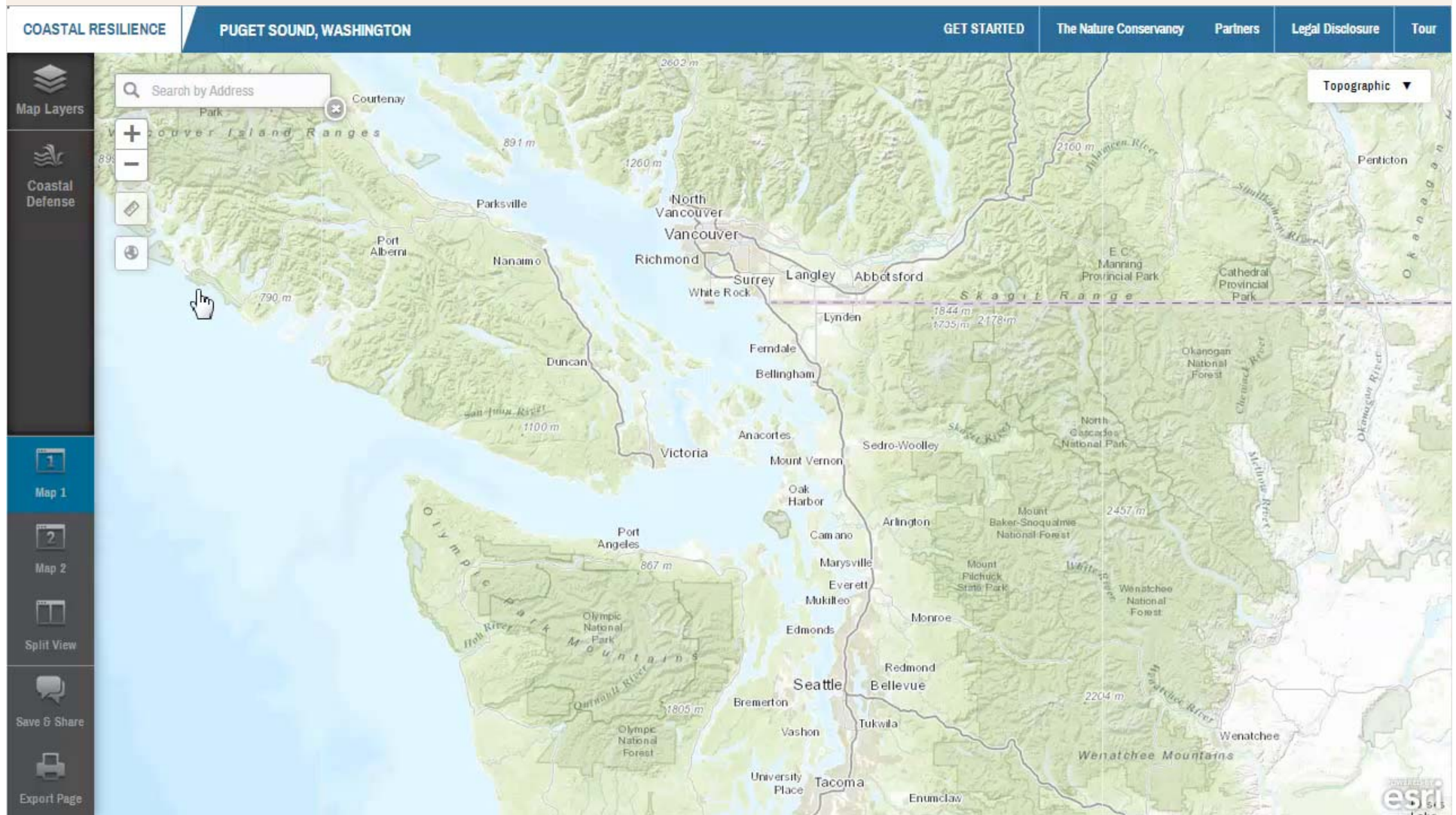


Wave attenuation with a degraded tidal marsh.



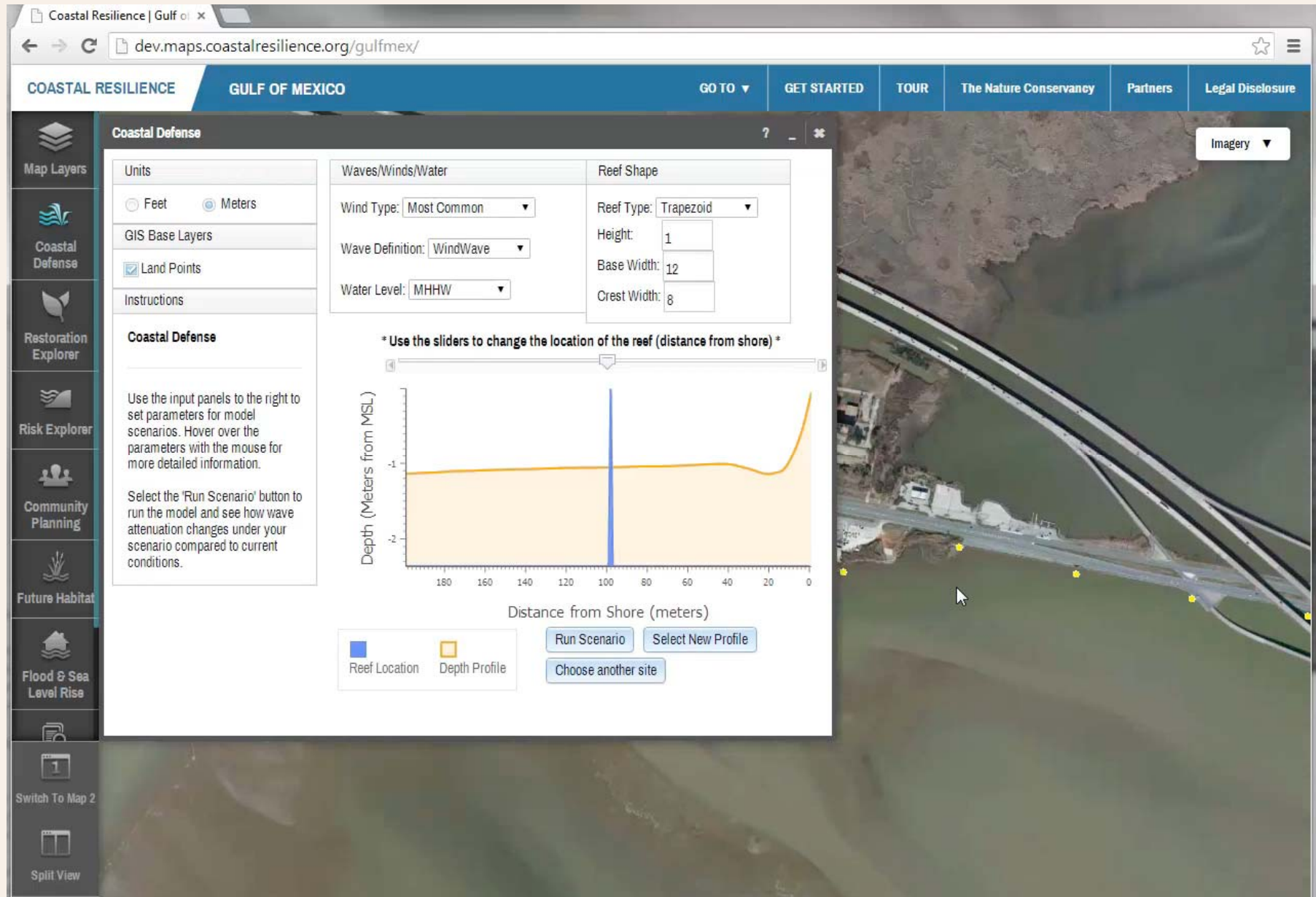
Coastal Resilience

Coastal Defense app



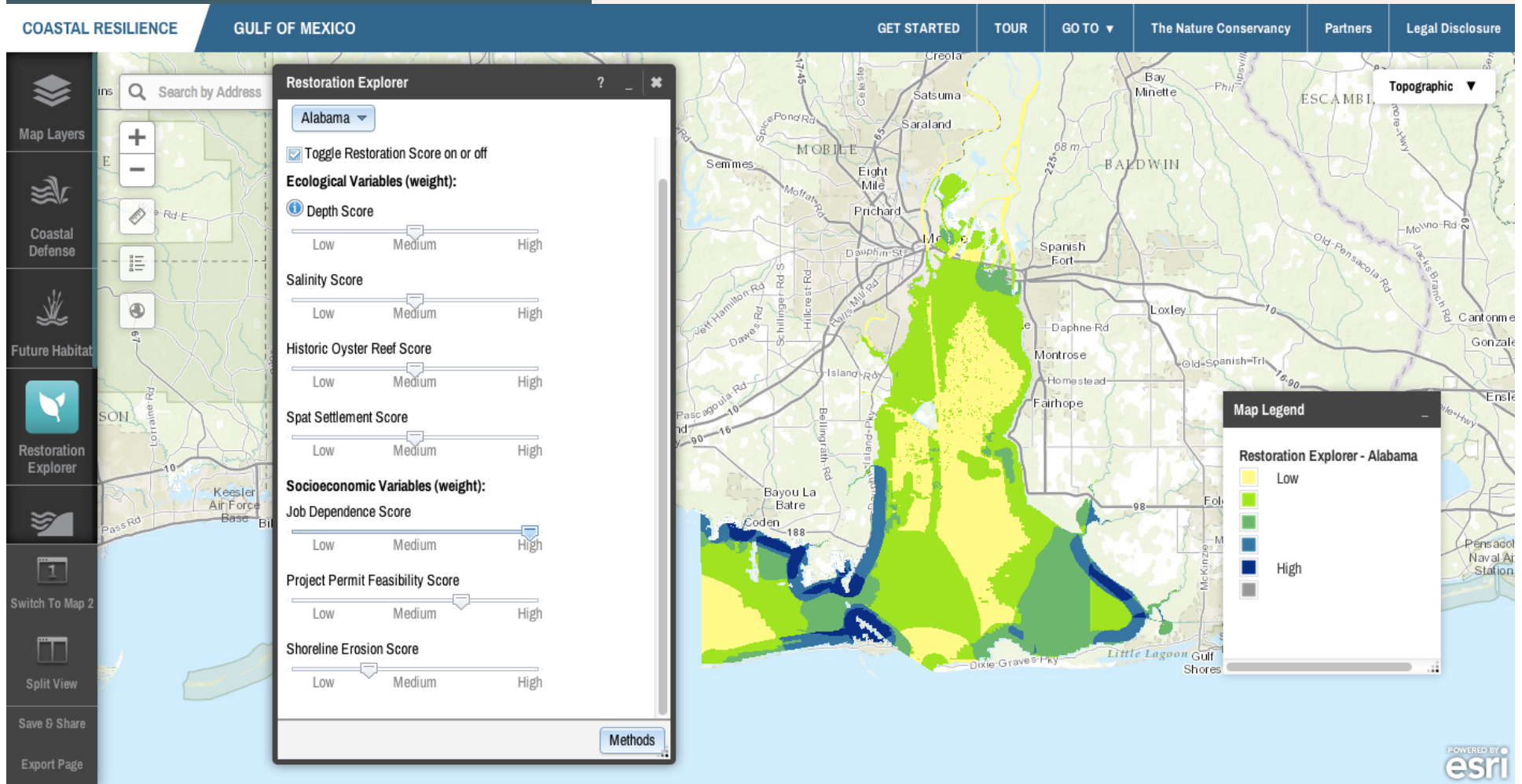
Coastal Resilience

Coastal Defense app



Coastal Resilience

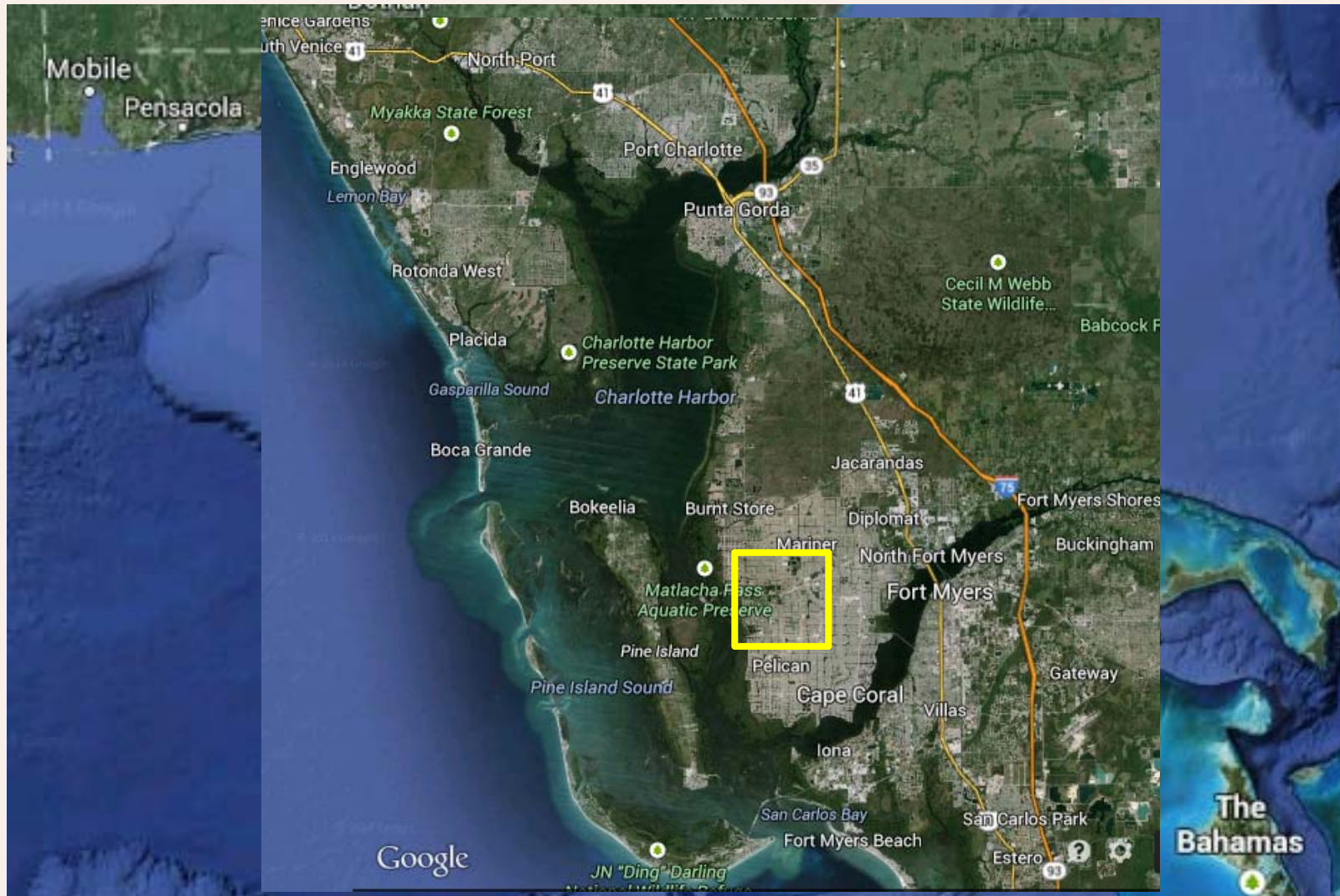
Restoration Explorer app



Project overview

- Advance the *Coastal Resilience* framework in Galveston Bay, TX and Charlotte Harbor, FL
 - Build a locally-relevant decision support tool and work with the communities to identify hazard reduction and climate adaptation strategies.
 - » Add locally-relevant land management, ecological and socio-economic data.
 - Leveraged existing resources including; NOAA's SLR Viewer.

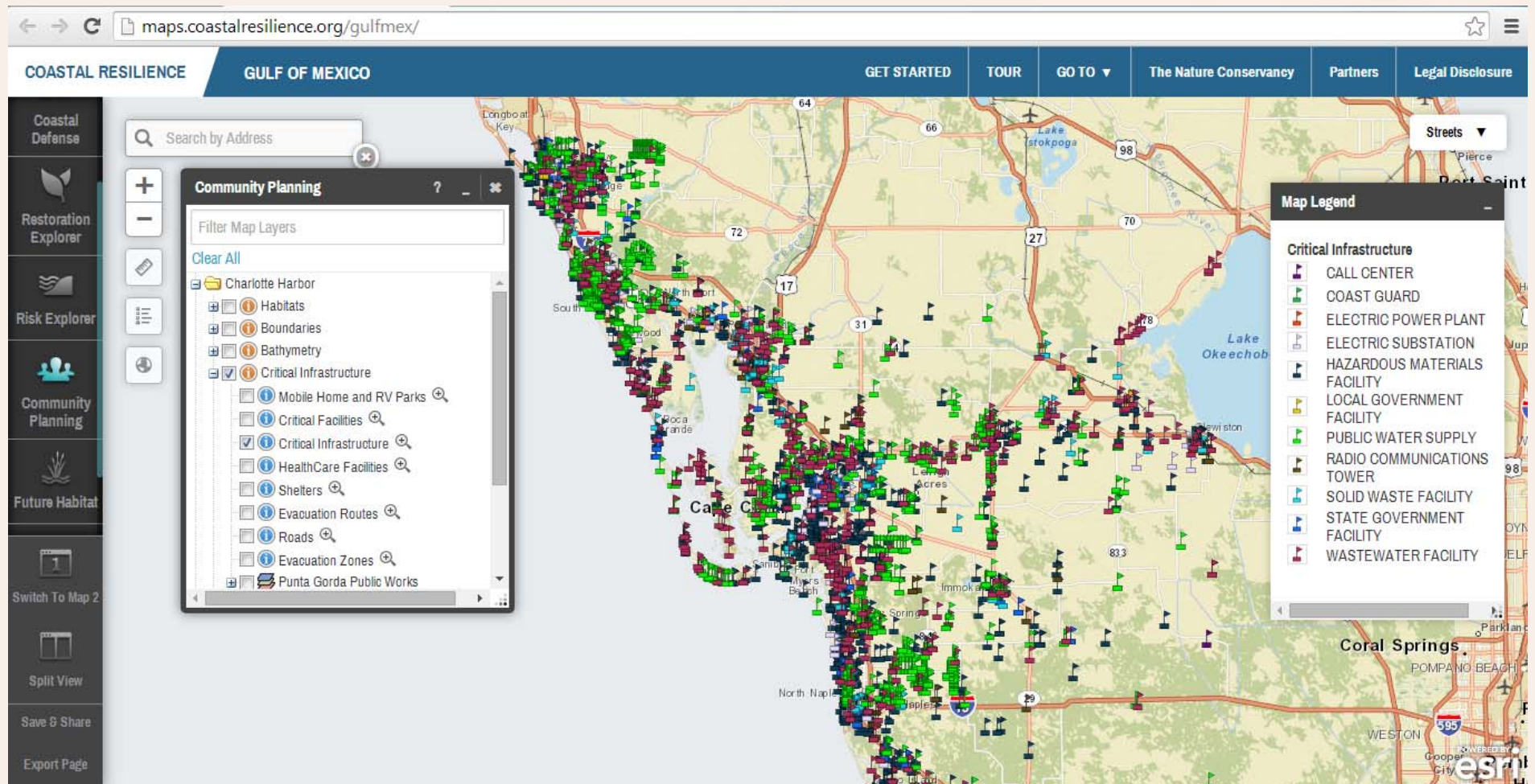
Charlotte Harbor, Florida



Initial workshop



Developed Community Planning App



Follow-up workshop

Preparing for Change: Building Resilient Communities

Charlotte Harbor Event &
Conference Center
75 Taylor Street
Punta Gorda, FL 33950

October 25, 2013, 9am-5pm
AICP CM/7 & CFM CM/6



Preparing for Change: Building Resilient Communities

In regions facing both severe weather conditions and burgeoning population, the need for disaster preparedness is great. In an era of financial austerity, planning becomes essential to provide cost-effective solutions which mitigate harm and provide the path to recovery. Featuring real data and interactive technology, instructors will use survey data from Florida coastal communities to demonstrate how floodplain managers and natural resource managers can design and implement interventions in their own communities, ultimately creating stronger communities.

LEARNING OBJECTIVES:

Part 1: The Problem- Coastal Communities at High and Growing Risk

1. Disasters magnify processes that are already taking place in your community.
 - Understand the current and future problems our community faces
 - Discover ways to mobilize your organization and community to address climate change and hazard sensitivity into local planning decisions
2. Resilience can be built in to existing plans using already-available tools.
 - Be able to evaluate the vulnerabilities in your community based on existing community characteristics
 - Be able to use the Coastal Resilience decision support tool to assess future risk conditions and vulnerabilities

Part 2: The Solution- Increasing our Resilience

3. Increasing resilience to disasters builds better communities (which are more resilient to future disasters).
 - Understand the components of resilience and the Disaster Resilience Framework
 - Mitigation actions and policies for climate change/variability should be treated the same.
 - Assess mitigation and recovery techniques that are common to all communities as well as those that are effective, but often overlooked
 - Be able to use the Coastal Resilience decision support tool to assess future risk conditions and vulnerabilities
 - Identify the ways communities can adaptively learn from past disasters
 - Mobilize community assets (capacity) to strengthen the community's response

ACTIVITY 2: SOCIAL VULNERABILITY

Social vulnerability is much like physical vulnerability, except it is focused on social factors and processes that generate vulnerability in terms of a person's or group's capacity to anticipate, cope with, resist and recover from the impact of a natural hazard. These factors include:

- Race/ethnicity,
- gender,
- education,
- poverty,
- age, and
- housing tenure

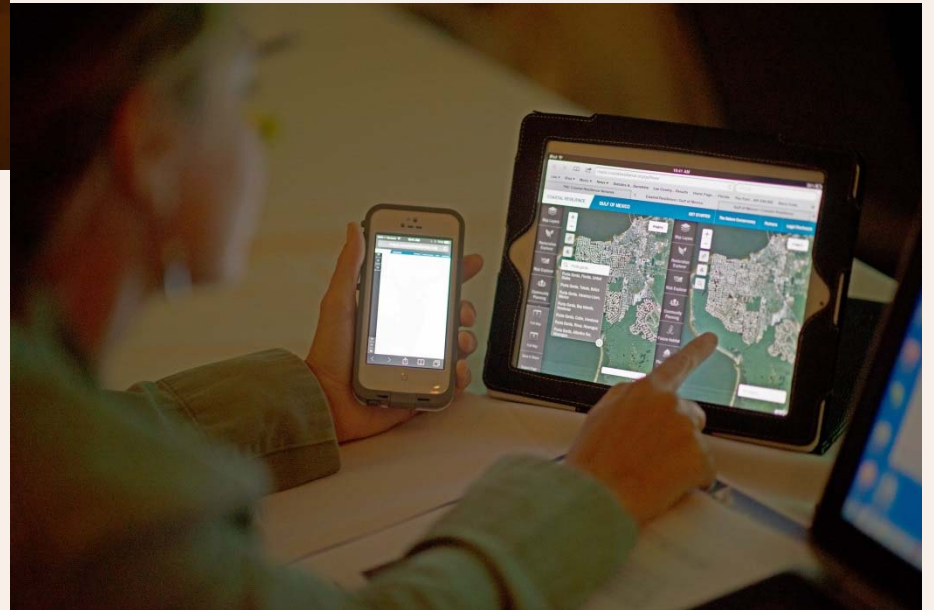
Social vulnerability will rarely be uniformly distributed among the individuals, groups, or various populations in a community. As a consequence we can develop mapping tools to identify areas with higher concentrations of socially vulnerable populations. Socially vulnerable populations are more likely to suffer from the damaging effects of hazards.

Poverty. Click on the **Map Layers App** and expand the "Florida" folder by clicking on the (+). Check the box next to "Social and Economic" and expand the "Social and Economic" layer. Check the box next to "Percent population living in poverty" and zoom into the Charlotte Harbor area. See Figure 8 below.

Figure 8. Percent Population living below the poverty line



Follow-up workshop









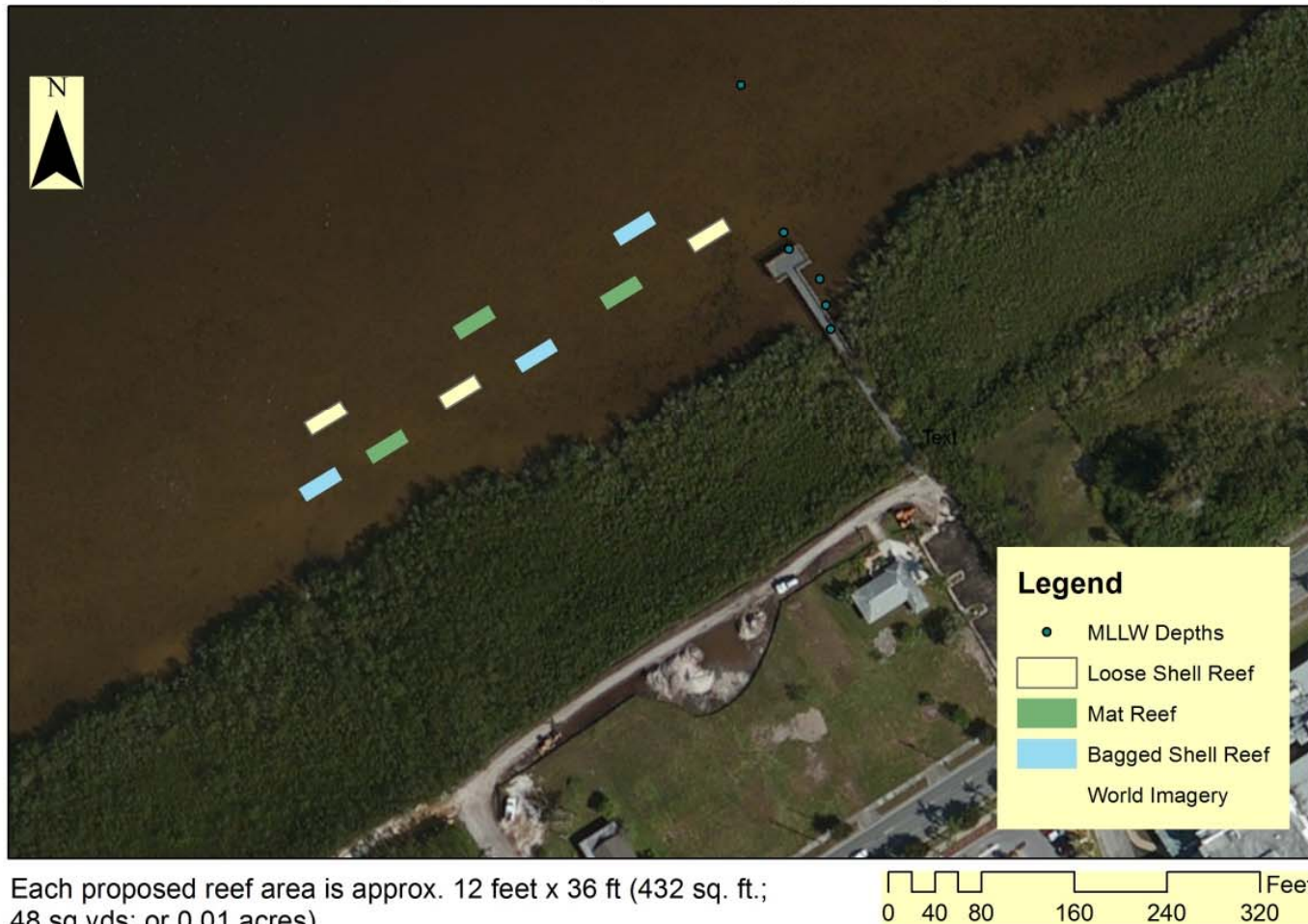
Panel Moderated by John Davis of WGCU/NPR

Preparation of Reef Materials Oyster Mat & Volunteer Update

As of May 31, 2014, 750 oyster mats were completed with the help of 1,148 volunteers who donated a total of 1,690 hours to the project!



Trabue Harborwalk Oyster Reef Creation Project off Adrienne Street Pier, Punta Gorda, FL Conceptual Project Design May 2014



Partners



The Nature Conservancy
Protecting nature. Preserving life.®



THE UNIVERSITY OF
SOUTHERN
MISSISSIPPI

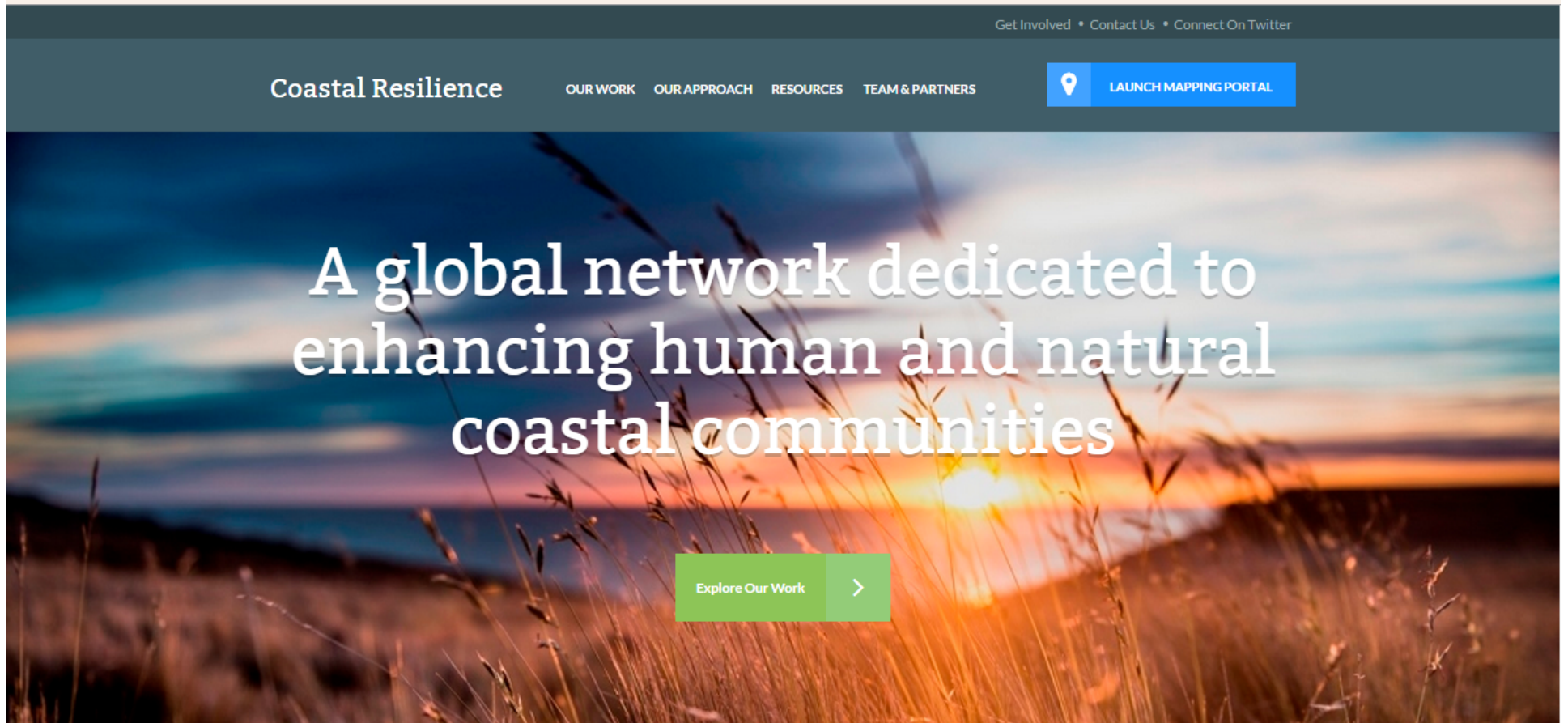
natural
capital
PROJECT



HAZARD REDUCTION
& RECOVERY CENTER
TEXAS A&M UNIVERSITY



Thank you!



CoastalResilience.org

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