

# 2023 GOMA Tools Café Descriptions

## Marine Debris Monitoring and Assessment Project

Presenter: Caitlin Wessel, NOAA Marine Debris Program

**WEB:** <https://marinedebris.noaa.gov/monitoring-toolbox>, <https://mdmap.orr.noaa.gov/>

### OVERVIEW

The Marine Debris Monitoring and Assessment Project (MDMAP) is a tool for assessing, identifying, and determining sources of marine debris, in turn informing prevention and removal activities. As a project that engages volunteers and produces accessible information about marine debris, MDMAP also serves as an outreach tool inspiring action by participants.

### INTENDED AUDIENCE

NOAA partners and volunteers around the world.

### MAIN USE

MDMAP engages NOAA partners and volunteers around the world in surveying and recording the amount and types of marine debris on shorelines using a rigorous methodology. MDMAP data are readily and openly accessible in a NOAA hosted database and application, following quality assurance and quality control procedures.

### GEOGRAPHY & SCALE

Global.

### ACCESSIBILITY

Online at <https://marinedebris.noaa.gov/monitoring-toolbox>, <https://mdmap.orr.noaa.gov/>

## Sea Level Rise Solutions for Your Community

Presenters: Keith VanGraafeiland, Esri

**WEB:** <https://sea-level-rise-esrioceans.hub.arcgis.com/>

### OVERVIEW

Creating realistic visualizations of flooding scenarios is an effective way to engage with your community and demonstrate potential impacts of Sea Level Rise, from the city to the human scale. In this example, we will explore several Sea Level Rise scenarios in coastal communities to assess impacts to buildings and transportation infrastructure, and to understand which populations may be most at-risk to future flooding events.

### INTENDED AUDIENCE

This rich set of resources is available to everyone.

### MAIN USE

It is targeted at local and state governments that would like to better understand sea level rise impacts. The resources can help identify various resources at risk and help develop coastal (and climate) resiliency plans.

## **GEOGRAPHY & SCALE**

Global.

## **ACCESSIBILITY**

Online at <https://sea-level-rise-esriocceans.hub.arcgis.com/>

## **What's New in GOMOD?**

Presenters: Drew Stephens, Cardinal Point Captains (CPC, Inc.)

**WEB:** <https://gmod-portal-gomalliance.hub.arcgis.com/>

## **OVERVIEW**

The Gulf of Mexico Open Data Platform (GOMOD) platform includes a comprehensive set of maps across the entire Gulf of Mexico, curated theme maps for key coastal and ocean management topics of interest to Gulf stakeholders, a data explorer where users can choose their own datasets of interest, and access to a suite of regional data tools developed by GOMA.

## **INTENDED AUDIENCE**

The Gulf of Mexico Alliance has developed an overarching strategy for regional data sharing aligned with priority issues identified by GOMA Teams. GOMA has developed GOMOD with CPC, Inc., to make it easier for the GOMA community to discover, explore, and access data. across the Gulf.

## **MAIN USE**

The GOMOD Platform currently includes a comprehensive map of priority habitat datasets for the entire region, curated theme maps for key coastal and ocean management topics of interest to Gulf stakeholders, a data explorer, and access to a suite of regional tools developed by GOMA.

A core Data Coordination Team regularly adds new content and functionality to GOMOD. A Visioning Team advises and guides GOMOD on themes and specific data content.

GOMOD is funded through GOMA's Gulf Star Program including past and current support from NOAA, Chevron, and Shell.

## **GEOGRAPHY & SCALE**

The Gulf of Mexico.

## **ACCESSIBILITY**

Online at <https://gmod-portal-gomalliance.hub.arcgis.com/>

## **The Galveston Bay Regional Monitoring Database**

Presenters: Dr. Ryan Bare, Houston Advanced Research Center (HARC)

**WEB:** <https://galvbaydata.org/>

## **OVERVIEW**

The Galveston Bay Regional Monitoring Database is an interactive portal that provides quality-assured data to support conservation and management of the Galveston Bay system. The portal contains direct data downloads, a searchable data catalog, and a series of interactive tools to visualize, create, and download custom subsets of data.

## **INTENDED AUDIENCE**

The primary audience is interested members of the public, conservation organizations, academic and research institutions, environmental non-profits, governmental agencies, and students.

## **MAIN USE**

The Galveston Bay Regional Monitoring Database (RMD) is an interactive portal that provides quality-assured data to support conservation and management of the Galveston Bay system. The RMD portal provides three options for data interaction 1) direct downloads of spatial and tabular datasets, 2) filter, and access available datasets through an inventory that provides supporting information, and 3) tools to explore, visualize, or create custom subsets of data for download using dashboards, interactive charts, and web maps. The RMD supports interactive tools such as the Water, Sediment, and Tissue Quality dashboard, the Coastal Fisheries Resource chart, and a Seafood Consumption Advisories web map. The full suite of newly released applications is available on the Interactive Tools page.

The 39 datasets and resource links included in the Galveston Bay RMD have been selected for their use as ecosystem indicators in collaboration with the Galveston Bay Estuary Program (GBEP). Quality assured data collected by federal, state, and local governments; universities; and research organizations can be downloaded for the spatial domain of the Lower Galveston Bay Watershed. These datasets are provided for the full period of record available (in some cases dating to the 1960s for long-term monitoring programs) unless otherwise noted.

## **GEOGRAPHY & SCALE**

Galveston Bay.

## **ACCESSIBILITY**

Online at <https://galvbaydata.org/>

# **Coastal Restoration Toolkit**

Presenters: Hilary Stevens, Restore America's Estuaries

**WEB:** <https://restoreyourcoast.org/>

## **OVERVIEW**

The Coastal Restoration Toolkit is an online resource for residents and citizen scientists who identify problems with their local coastal environment.

## **INTENDED AUDIENCE**

Coastal communities.

## **MAIN USE**

Restore America's Estuaries has developed an online "Toolkit" (RestoreYourCoast.org) to support coastal residents and citizen scientists who identify problems with their local coastal environment and have an interest in transforming the idea into a project. The Toolkit enables community members who aspire to improve their local ecosystem, but who need the information and guidance to go from project idea, to design, to implementation. The Toolkit is divided into five main topic areas: Water Quality, Flooding, Coastal Erosion, Invasive Species, and Wildlife Habitats.

## **GEOGRAPHY & SCALE**

U.S. coastal communities.

## **ACCESSIBILITY**

Online at <https://restoreyourcoast.org/>

## **Deepwater Horizon Project Tracker**

Presenters: Alek Kreiger, Ducks Unlimited

**WEB:** [www.dwhprojecttracker.org](http://www.dwhprojecttracker.org)

### **OVERVIEW**

The Deepwater Horizon Project Tracker provides an easy and comprehensive way to track restoration, research, and recovery projects resulting from the 2010 Deepwater Horizon oil spill.

### **INTENDED AUDIENCE**

Conservation planners, Project Implementers, Funders, General Public

### **MAIN USE**

To map and provide key information about research, restoration, and recovery projects funded by the Deepwater Horizon oil spill settlements, fines, and other payouts in the Gulf of Mexico.

### **GEOGRAPHY / SCALE**

North America, focusing on the Gulf of Mexico region, migratory flyways of birds impacted by the oil spill, and cities in which relevant research and policy work are occurring. The scale varies depending on the project / projects of interest to the user.

### **ACCESSIBILITY**

Online website, tabular and GIS downloads, online maps, tables, and summaries, map service.

## **High Resolution Coastal Land Cover for the Nation**

Presenters: Dave Stein, NOAA Office for Coastal Management

**WEB:** N/A

### **OVERVIEW**

NOAA will highlight its current work to produce high resolution land cover for all coastal areas of the nation, and our goals to work in collaboration with other federal agencies, regional groups, and states to make those products available nationally.

### **INTENDED AUDIENCE**

Natural resource managers.

### **MAIN USE**

Understanding current land cover patterns and past change trends is essential to comprehensive management, assessment, and future planning. For more than two decades, NOAA's Office for Coastal Management has been producing consistent, accurate land cover and change information for the coastal U.S through its Coastal Change Analysis Program (C-CAP). Based on Landsat imagery, these products have been updated every 5 years. Dates range back to at least 1996, with some locations that have overage for the full Landsat time series. In recent years, NOAA has been working to establish an operational higher resolution land cover product line, bringing the national C-CAP framework to the local level and that would create data capable of supporting more site-

specific applications. This work has been possible because of the wealth of available imagery, lidar, and ancillary data, as well as improvements to production flows seen in distributed or cloud-based processing and more advanced artificial intelligence classification techniques. This demo will highlight NOAA's current work to produce high resolution land cover for all coastal areas of the nation, and our goals to work in collaboration with other federal agencies, regional groups, and states to make those products available nationally. We will highlight the technical details of the data, NOAA's longer-term vision, cover appropriate use case examples, and talk about opportunities for interested partners to leverage this data.

#### **GEOGRAPHY & SCALE**

U.S. coastal watersheds.

#### **ACCESSIBILITY**

This tool is in development.

## **Flowpath and Stormwater Technologies**

Presenters: Steven Mikulencak, Texas A&M AgriLife

**WEB:** [communityviz.com](http://communityviz.com); [communitycharm.org](http://communitycharm.org)

#### **OVERVIEW**

Flowpath Assessment & Stormwater Technologies (FAST) visualizes how stormwater collects and flows across the land, and enables scenario planning for green infrastructure (GI) practices on specific sites or neighborhoods. The tool is ideal for use in a collaborative setting for discovery, scoping, and plan development.

#### **INTENDED AUDIENCE**

FAST is intended for use by technical and non-technical stakeholders to visually identify and explore opportunities for green infrastructure (GI) projects in a community. It is particularly valuable for participants with responsibilities for stormwater management, land management, infrastructure, development, enforcement, and planning.

#### **MAIN USE**

FAST visualizes where and how stormwater flows and collects in a neighborhood, while letting users create scenarios for customized green infrastructure interventions, by which real-time feedback is provided about potential costs, impacts, and benefits. This approach facilitates discovery, scoping, and plan development, while offering important contextual data for dialogue and decision-making about stormwater management. The tool provides a quick way to explore where interventions are possible and kicking-off ideas for funding proposals, project designs, or more robust engineering studies for in-the-ground GI practices. GI practices in FAST include permeable pavements, rain gardens, rain barrels, infiltration basins, green roofs, bioswales, native vegetation, constructed wetlands, and detention and retention practices.

#### **GEOGRAPHY & SCALE**

The FAST GI analysis tools are run on a vector grid of ten-foot by ten-foot grid cells, and study areas can be custom selected for scales ranging from site level to city-wide. The data for FAST is currently limited to Texas, however statewide data services for LIDAR and aerial imagery could extend the FAST data footprint in the near future.

## **ACCESSIBILITY**

The web service will be released in early 2024. The FAST application is a pilot project funded by the Texas General Land Office and developed by Texas A&M AgriLife Extension Service, UC San Diego, and a consulting team lead by Focused Planning Solutions LLC. CommunityViz® software is owned by Texas A&M AgriLife Extension Service. This demonstration of the FAST tool is for the year-one prototype of a five-year project, and we are actively seeking feedback about the tool's features and applications to real world challenges.

## **Coastal Pollution Data Explorer**

Presenters: Christine Buckel<sup>1</sup>, Arina Morozova<sup>1</sup>, Lauren Swam<sup>1</sup>, Dennis Apeti<sup>1</sup>

<sup>1</sup> NOAA NCCOS

**WEB:** N/A

## **OVERVIEW**

The Coastal Pollution Data Explorer will be an interactive web-based interface where users can explore spatial and temporal trends of chemical, physical, biological, and toxicological data. Users can compare, analyze, graph, and download NCCOS contaminant data from 1986 to the present.

## **INTENDED AUDIENCE**

The Coastal Pollution Data Explorer (CPDE) is currently under development and would benefit from your feedback. This will be an online data explorer with a target audience of persons focused on water quality and human and ecosystem health (e.g., academics, state and federal organizations, and non-profit and conservation organizations).

## **MAIN USE**

It will contain data spanning the coastal regions of the continental US (including the Great Lakes), Alaska, Hawaii, and Puerto Rico. Data displays will highlight trends and measurements of:

- 1) Contaminants of emerging concern (e.g., PFAS, pharmaceuticals),
- 2) Legacy organic contaminants (e.g., pesticides, PCBs, PAHs), and
- 3) Metals (e.g., arsenic, cadmium, lead, mercury)

The CPDE will make it easier to find and download data users need with easy filtering, summarizing, and interactive maps and charts.

## **GEOGRAPHY & SCALE**

Continental U.S., Alaska, Hawaii, and Puerto Rico

## **ACCESSIBILITY**

This tool is currently under development.

## **HABscopeV2**

Presenters: Robert Currier, Texas A&M University Department of Oceanography

**WEB:** <http://redtideforecast.com>

## **OVERVIEW**

A cloud-hosted, AI powered citizen science instrument for classifying multiple harmful algal bloom taxa.

## **INTENDED AUDIENCE**

Citizen scientists, NOAA HAB researchers, state, county and local governments.

## **MAIN USE**

Blooms of the toxic microalgae *Karenia brevis* occur seasonally in Florida, Texas and other portions of the Gulf of Mexico. Brevetoxins produced during *Karenia* blooms can cause neurotoxic shellfish poisoning in humans, massive fish kills, and the death of marine mammals and birds. Brevetoxin-containing aerosols are an additional problem, having a severe impact on beachgoers, triggering coughing, eye and throat irritation in healthy individuals, and more serious respiratory distress in those with asthma or other breathing disorders. To provide timely information to visitors about which beaches are low-risk, we developed HABscopeV2; a low cost (~\$500) microscope system that can be used in the field by citizen scientists with cell phones to enumerate *K. brevis* cell concentrations in the water along each beach. The HABscope system operates by capturing short videos of collected water samples and uploading them to a central server for rapid enumeration of *K. brevis* cells using calibrated recognition software. When deployed by volunteer citizen scientists, the HABscope consistently distinguished low, medium, and high concentrations of cells in the water. The volunteers were able to collect data on most days during a severe bloom. This indicates that the HABscope can provide an effective capability to significantly increase the sampling coverage during *Karenia brevis* blooms.

## **GEOGRAPHY & SCALE**

Gulf of Mexico – West Coast of Florida with bloom-limited participation by Texas Red Tide Rangers. Chesapeake Bay. One unit is undergoing testing in Alaska.

## **ACCESSIBILITY**

Online at <http://redtideforecast.com>

# **Strategic Conservation Assessment Tool**

Presenters: Kristine Evans<sup>1</sup>, Yong Liang<sup>1</sup>

<sup>1</sup> Mississippi State University

**WEB:** <https://www.quest.fwrc.msstate.edu/sca-project.php>

## **OVERVIEW**

The Strategic Conservation Assessment (SCA) Tool assists land conservation planners in evaluating ecological and socioeconomic co-benefits of proposed land conservation projects within the U.S. Gulf of Mexico coastal region. The SCA Tool is a flexible, data-driven framework that allows users to explore the benefits of land conservation under their priorities.

## **INTENDED AUDIENCE**

The Strategic Conservation Assessment of Gulf Coast Landscapes (SCA) project serves land and resource agencies working in the five Gulf states: Alabama, Florida, Louisiana, Mississippi, and Texas. The SCA tool suite is relevant and useful to the broader Gulf conservation community, including member agencies of the RESTORE Council, land trusts, nongovernmental organizations, and private industry.

## **MAIN USE**

Land and resource decision-makers currently have an unprecedented opportunity for land conservation in the Gulf Coast Region yet identifying optimal projects to meet conservation goals remains a persistent challenge. The SCA project provides a suite of planning support tools to assist Gulf conservation stakeholders in integrating shared priorities for land conservation and evaluating co-benefits of potential projects in a geospatial environment given individual stakeholder values.

## **GEOGRAPHY AND SCALE**

The Gulf Coast Region: coastal zones within the five Gulf states, plus 25 miles inland.

## **ACCESSIBILITY**

Online at <https://www.quest.fwrc.msstate.edu/sca-project.php>.

# **Mapping Irregularly Flooded Marine Ecosystems**

Presenters: Nicholas M. Enwright<sup>1</sup>, Kristine O. Evans<sup>2</sup>, Wyatt C. Cheney<sup>3</sup>, Auriel M.V. Fournier<sup>5</sup>, Mark S. Woodrey<sup>2</sup>, Hana R. Thurman<sup>4</sup>

<sup>1</sup> U.S. Geological Survey

<sup>2</sup> Mississippi State University

<sup>3</sup> Cheney Consulting

<sup>4</sup> Cherokee Nation System Solutions

<sup>5</sup> University of Illinois at Urbana-Champaign

**WEB:** ArcGIS Online: Mapping irregularly flooded wetlands, high marsh, and salt pannes/flats along the northern Gulf of Mexico coast - Overview ([arcgis.com](http://arcgis.com)); geographic information system data: <https://doi.org/10.5066/P9MLO26U>.

## **OVERVIEW**

Through the National Oceanographic and Atmospheric Administration's (NOAA) RESTORE Science Program, the USGS and the Mississippi State University have collaborated to create a probabilistic map of irregularly flooded wetlands and the first regional map of high marsh and salt panne and salt flat systems across the northern Gulf of Mexico.

## **INTENDED AUDIENCE**

Natural resource managers and coastal scientists that require information on the distribution and areal coverage of high marsh and salt panne and salt flat systems along this region for current and future monitoring and making management decisions related to these important systems.

## **MAIN USE**

This tool provides baseline information on the spatial distribution and extent of high marsh and salt panne and salt flat systems across the northern Gulf of Mexico coast. During this century, accelerated sea-level rise and climate change are expected to greatly impact wetlands across the entire coastal zone. In addition to understanding how these systems change over time with sea-level rise and climate change, these maps can also be used to guide avian and marsh monitoring efforts.

## **GEOGRAPHY AND SCALE**

This product spans the coastal zone of the northern Gulf of Mexico coast from south Texas to the Florida Keys. The maps are raster-based products with a spatial resolution of 10 meters.

## **ACCESSIBILITY**

The maps have been published as a USGS data release (<https://doi.org/10.5066/P9MLO26U>). These products can be downloaded as raster files (i.e., grid-based geographic information system files)



from ScienceBase. The team has also made these products available via ArcGIS Online. The irregularly flooded wetlands products have been highlighted in a recent journal article published in Remote Sensing of Environment (<https://doi.org/10.1016/j.rse.2023.113451>).

## **2023 Coastal Master Plan Data Viewer**

Presenters: Ashley Cobb, Louisiana Coastal Protection and Restoration Authority (CPRA)

**WEB:** <https://mpdv.coastal.la.gov>

### **OVERVIEW**

The Master Plan Data Viewer is an interactive online companion to Louisiana's 2023 Coastal Master Plan. This data viewer presents projections of coastal change over 50 years and the potential impacts of restoration and risk reduction projects to address the challenges of land loss and coastal flood risk.

### **INTENDED AUDIENCE**

The viewer is primarily designed for coastal Louisiana residents, as well as local planners, parish/municipal officials, floodplain managers, emergency managers, other state agencies, and community groups.

### **MAIN USE**

Developed for the 2017 plan, the Master Plan Data Viewer was updated with 2023 plan information to provide insight into current and future land change, vegetation type, flood depths, economic and structure damage, and 2023 Coastal Master Plan Projects. This interactive tool displays projected flood risk and land change data that helps viewers visualize what change might look like over time over the next 50 years in their communities and across the coast. The data viewer also provides detailed information about recommended protection and restoration projects.

Not only has the viewer been updated with the 2023 plan information, which includes the most up to date model outputs at a higher resolution, but the viewer's style and functionality has also been improved. One significant improvement to the user experience is that the landing screen now has the option to take a Guided Tour to help first time users understand the nature of Louisiana's coastal crisis, learn more about their current and future coastal flood risk, and what implementation of the 2023 Coastal Master Plan would accomplish. The Explore feature allows users to dive deeper into the data. Additional functionality includes increased search bar capabilities, map export functions, and expanded data download capabilities.

### **GEOGRAPHY & SCALE**

The viewer provides information for coastal Louisiana.

### **ACCESSIBILITY**

The viewer is available online and new for the 2023 Master Plan Data Viewer, on mobile phones and tablets.

## Coastal Flood Exposure Mapper

Presenters: Annette Black<sup>1</sup>, Kristin Ransom<sup>1</sup>, Marian Hanisko<sup>1</sup>

<sup>1</sup> NOAA Office for Coastal Management

**WEB:** <https://coast.noaa.gov/digitalcoast/tools/flood-exposure.html>

### OVERVIEW

This online visualization tool supports communities that are assessing their coastal hazard risks and vulnerabilities. The tool creates a collection of user-defined maps that show the people, places, and natural resources exposed to coastal flooding. Maps can be saved, downloaded, or shared to communicate flood exposure and potential impacts.

### INTENDED AUDIENCE

Elected officials, planners, floodplain managers, emergency managers, and the public.

### MAIN USE

Flood events are among the more frequent and costly coastal hazards that impact coastal communities. Planning for current and future flood hazards can be a challenge, and the first step is to understand a community's exposure. The Coastal Flood Exposure Mapper, developed by NOAA's Office for Coastal Management, supports community conversations about flood hazard vulnerabilities by providing maps and information showing where people, places, and natural resources are exposed to flooding. Maps can be saved, downloaded, or shared to communicate flood exposure and potential impacts. Additionally, the tool provides guidance for using these maps to engage community members and stakeholders.

### GEOGRAPHY & SCALE

For the contiguous United States, map data are displayed down to the neighborhood level (roughly 1:9,000). For Hawaii and the U.S. territories, map data are displayed one additional level down (roughly 1:4,500). The mapper is a screening level tool with existing national data that are locally relevant.

### ACCESSIBILITY

Online at <https://coast.noaa.gov/digitalcoast/tools/flood-exposure.html>.

## Tools Café Conversation Corner

Presenters: Brenna Sweetman<sup>1</sup>, Marian Hanisko<sup>1</sup>, Chris Ellis<sup>1</sup>

<sup>1</sup> NOAA Office for Coastal Management

**WEB:** N/A

### OVERVIEW

We will conduct an interactive learning activity using the 4 L's to understand what tool demo participants "liked, learned, lacked and longed for" from the GOMA Tools Showcase.

### INTENDED AUDIENCE

GOMA All Hands and Tools Café attendees. Results will help inform the Coastal Resilience to Inundation Community of Practice.

### MAIN USE

Strengthening the resilience of our coastal communities is complex and a variety of tools exist to help communities make more informed decisions. NOAA, in coordination with partners, is striving

to advance the tools, data and services needed to address coastal resilience with a strong focus on reducing flooding risk. Given the many resilience tools in existence, we propose a Tools Café “conversation corner” to have a dialogue and gather feedback on what is available. The intent is to assess the different types of tools, understand gaps, identify preferred features and functionality, among other relevant information, to ultimately help improve and refine existing tools. In addition to this general overview of all GOMA tools, we intend to ask specific questions focused on coastal flooding data, tools and information needs, to help shape the future of NOAA’s future services and inform the upcoming Coastal Resilience to Inundation Community of Practice. This community of practice is a collaborative effort to develop a trusted nationwide “boots on the ground” network of adaptation and resilience experts who work with communities to learn from and advance reliable science to build resilience to inundation hazards.

### **GEOGRAPHY & SCALE**

TBA

### **ACCESSIBILITY**

This tool is under development.

## **Coastal Morphometric Analysis Toolkit**

Presenters: Cheryl Hapke, Integral Consulting

**WEB:** <https://cmat.integral-corp.com/> (NOTE: this is a limited functionality version)

### **OVERVIEW**

The Coastal Morphometric Analysis Toolkit (CMAT) is an interactive, online dashboard that is custom-made for any specific community, property, or project that has time series of beach profiles. CMAT greatly streamlines data analysis, interpretation, and accessibility.

### **INTENDED AUDIENCE**

Any manager or decision-maker for a community, facility, or project that needs to understand how the coast is changing over time and in response to both human and natural events (i.e., nourishment, living shorelines, storms).

### **MAIN USE**

Communicating decision-making to stakeholders is often hindered by a lack of tools that provide quick access to combinations of complex coastal data. CMAT ingests existing beach profile data and creates an interface that allows the user to visualize their data and understand and communicate coastal change. The toolkit can be updated anytime new data are available, and CMAT automatically recalculates statistics of change and displays the new data along with the historical data. Easy and accessible visualization of changes to beach morphology through time allows for better planning for the future.

### **GEOGRAPHY**

Can be used in any geographic location that has beaches and dunes. It can be used on a project scale (< 1km) or larger scales (10s of kms or entire barrier islands).

### **ACCESSIBILITY**

The toolkit is a customized, interactive online dashboard.

# The Southeast Conservation Blueprint

Presenters: Adam Malcomb<sup>1</sup>, Brecken Robb<sup>1</sup>

<sup>1</sup> U.S. Fish and Wildlife Service, Southeast Conservation Adaptation Strategy

**WEB:** <http://secassoutheast.org/blueprint>

## **OVERVIEW**

The Southeast Conservation Blueprint is a living spatial plan to achieve the Southeast Conservation Adaptation Strategy vision of a connected network of lands and waters that supports thriving fish and wildlife populations and improved quality of life for people across the Southeast and Caribbean.

## **INTENDED AUDIENCE**

For use by any conservationist, including Federal, State, and Local agencies, Tribal nations, private organizations, nonprofit organizations, academic institutions, and private landowners.

## **MAIN USE**

The Southeast Conservation Blueprint is a living spatial plan to achieve the Southeast Conservation Adaptation Strategy vision of a connected network of lands and waters that supports thriving fish and wildlife populations and improved quality of life for people across the Southeast and Caribbean. The Blueprint identifies priority areas for conservation and restoration based on a suite of natural and cultural resource indicators representing terrestrial, freshwater, and marine ecosystems. It does this by incorporating multiple sub-regional plans and running them through consistent methodology and indicator development. A connectivity analysis identifies corridors that link coastal and inland areas and spans climate gradients. Because the Blueprint is a living plan, it continues to evolve with improvements to underlying data, changing on-the-ground conditions, and input from partners.

## **GEOGRAPHY & SCALE**

The Blueprint spans 15 states of the Southeast, Caribbean territories, and Atlantic and Gulf marine waters.

## **ACCESSIBILITY**

The tool is available online as a web viewer and a data download package of underlying components.

## **Innovations in Sea-Level Rise Science Application, Education, and Outreach**

Presenters: Renee Collini<sup>1</sup>, Ali Rellinger<sup>2</sup>

<sup>1</sup> The Water Institute

<sup>2</sup> Place:SLR

**WEB:** See Accessibility section below.

## **OVERVIEW**

This exhibit consists of multiple resources and tools intended to help with innovative, easy, and engaging approaches to understanding and communication around sea-level rise resilience.

## **INTENDED AUDIENCE**

These resources are intended for built and natural environment coastal stewards to understand, apply, and share information on future conditions, potential impacts, and how to take productive action to increase flood resilience. This includes professionals such as natural resource managers,

restoration specialists, floodplain managers, city planners, elected officials, transportation and utility professionals, coastal engineers, consultants, and extension, outreach, and education professionals.

### **MAIN USE**

Consisting of multiple resources and tools, these are intended to help with innovative, easy, and engaging approaches to understanding and communication around sea-level rise resilience. The tools range from assessing changes in mean sea level for specific location to warm-up activities for planning meetings. Topics range across science basics, nature-based solutions, policy, decision-making with uncertainty, stakeholder engagement, and community planning, high tide inundation, changes in storm surge extent and depth, and populations/infrastructure at risk due to sea-level rise. Specific resources for accessing and applying the science include Local SLR.org, the Application Guide for the 2022 Sea Level Rise Technical Report, NOAA Sea Level Rise Viewer, the Gulf of Mexico Storm Surge Story Map, and the Economic Impacts Assessment tool which includes economic impacts of changing storm surge. Education and communication resources include the SLR in the Classroom curriculum, the Community's RISE approaches including a myriad of games designed to share critical, local concepts around rising seas, and the SLR graphics library and case study videos.

### **GEOGRAPHY & SCALE**

The majority of these resources are national in scale, though some of the more advanced models cover smaller geographies that are focused in the northern Gulf of Mexico (Mississippi, Alabama, and northwest Florida).

### **ACCESSIBILITY**

All these resources are available online at their respective websites.

Local projections of SLR: Interagency Project Tool ([www.localslr.org](http://www.localslr.org))

How to apply SLR information: Application Guide (<https://placeslr.org/wp-content/uploads/2022/07/Application-Guide.pdf>)

Future high tide: NOAA Sea Level Rise Viewer (<https://coast.noaa.gov/slr/>)

Future storm surge: Gulf of Mexico Storm Surge Story Map ([www.gomsurge.org](http://www.gomsurge.org))

Economic impacts of changing surge: Economic Impacts Viewer

(<https://experience.arcgis.com/experience/0aa2ee3b86304fffb6b97f6dd6ffa42b/page/Overview/>)

Sea Level Rise in the Classroom: <https://placeslr.org/our-work/projects/slr-in-the-classroom/>

Community's RISE: <https://placeslr.org/our-work/projects/environmental-literacy-program-project/>

SLR Graphics Library and Video: <https://placeslr.org/our-products/resilience-to-future-flooding-short-films/>

## **GRIIDC**

Presenters: Rosalie Rossi, Harte Research Institute for Gulf of Mexico Studies at Texas A&M University - Corpus Christi

**WEB:** [griidc.org](http://griidc.org)

### **OVERVIEW**

GRIIDC is a multidisciplinary data repository that stores and shares data generated by Gulf of Mexico researchers.

## **INTENDED AUDIENCE**

Academic researchers; natural resource managers; policy makers; emergency responders; non-governmental organizations; and the general public.

## **MAIN USE**

The tool was initially designed to manage and distribute data generated by Gulf of Mexico Research Initiative (GoMRI) funded projects. Most data available through the tool have been generated after the 2010 Deepwater Horizon incident. Datasets available through the tool have been produced through lab, field, and modeling activities describing phenomenon ranging from microscopic fluid dynamics to large scale ocean currents, bacteria to marine mammals, and detailed observations to synoptic mapping.

The GRIIDC program is developing new partnerships to continue our mission of ensuring a data and information legacy that promotes continual scientific discovery and public awareness of the Gulf of Mexico ecosystem. Potential partnerships with research institutions, oil and gas industry, and others will allow more investigators to use these tools to manage and share their data.

## **GEOGRAPHY & SCALE**

The tool is focused on Gulf of Mexico data; however, limited datasets are available related to other locations including the North Sea and the Pacific Coast of North America.

## **ACCESSIBILITY**

This tool is available online only.

## **The Index to Marine and Lacustrine Geological Samples**

Presenters: Clint H Edrington, The Northern Gulf Institute, A Cooperative Institute of NOAA's National Centers for Environmental Information (NCEI)

**WEB:** <https://maps.ngdc.noaa.gov/viewers/imlgs/samples>

## **OVERVIEW**

The Index to Marine and Lacustrine Geological Samples (IMLGS) is a database and web-accessible map viewer that enables researchers to discover and access (i) digital geological data gleaned from seabed and lakebed geological samples as well as (ii) the physical samples underlying the digital data and curated at partner institutions.

## **INTENDED AUDIENCE**

The IMLGS lends itself to research conducted on the seabed and/or subseabed environments. The IMLGS supports research in the obvious disciplines of marine geology, geophysics, and engineering, but also broader marine science, including benthic ecology and hydrography.

Examples of science and industry applications for which the IMLGS can be applied include locating offshore mineral resources (e.g., sources of sand for coastal restoration), studying benthic habitat (e.g., seabed substrate), and mapping the seabed (e.g., ground-truthing acoustic data). Altogether, the IMLGS is applicable to the GOMA Priority Issues and Initiatives (i) Habitat Resources, (ii) Data and Monitoring, and (iii) Integrated Planning.

## **MAIN USE**

The IMLGS map viewer presents a map interface to help users find, preview, and download marine and lacustrine geological data. Data are displayed in the map viewer as point data on a map (i.e., a dot on the seabed). However, many data points extend in the vertical scale. For instance, a core sample may include a geological measurement at the seabed as well as additional measurements at various depths along the length of the core. The map viewer provides the user three options for

querying the IMLGS database: (i) the cursor can be used to select an individual sample on the map; (ii) a bounding box can be drawn around a group of samples within an area or region on the map; and (iii) search options can be defined from the sample control panel. The returned set of information from a query can then be exported as a table by the user. If a physical sample(s) is desired for further research, the user can also use the map viewer to locate the contact information for the repository(ies) curating the physical sample(s) to request access.

#### **GEOGRAPHY & SCALE**

The IMLGS is global in scope, with over 228,000 samples in the database representing marine and lacustrine cores, grabs, and dredges collected from around the world. The IMLGS database also includes a large data presence in the Gulf of Mexico with over 11,500 samples represented.

#### **ACCESSIBILITY**

Online at <https://maps.ngdc.noaa.gov/viewers/imlgs/samples>.

## **Living Shoreline Suitability Model for Pensacola Bay**

Presenters: Shelley Alexander, Santa Rosa County Florida

#### **WEB:**

<https://troygeoamtics.maps.arcgis.com/apps/instant/interactivelegend/index.html?appid=e9eee63681694840a5a7d8ee41f19eb6>

#### **OVERVIEW**

A tool for Pensacola Bay, FL coastal property owners as to what type of living shoreline management strategy needs to be taken to protect property from coastal erosion.

#### **INTENDED AUDIENCE**

Gulf of Mexico Coastal public and private waterfront property owners and managers

#### **MAIN USE**

Over the last 15 years many property owners have begun using “living shorelines” also known as green infrastructure to control shoreline erosion. These approaches include installing vegetation, vegetation with sills, or offshore breakwaters built using rock or oyster shells coupled with beach nourishment and/or plantings. Living shorelines offer a more sustainable and environmentally friendly strategy to control shoreline erosion, with footprints that incorporate native vegetation and natural elements that are designed to maintain natural coastal processes. If you own coastal waterfront property, you are most likely faced with deciding, as to what type of shoreline management strategy needs to be taken to protect your property from erosion, or to replace existing shoreline structures due to the persistent erosional forces. Using ESRI ArcGIS software, the user can locate their property using an online “viewer” that generates a shoreline recommendation for a “particular shoreline segment” along with providing other relevant landscape details.

#### **GEOGRAPHY & SCALE**

Pensacola Bay, FL.

#### **ACCESSIBILITY**

Online at

<https://troygeoamtics.maps.arcgis.com/apps/instant/interactivelegend/index.html?appid=e9eee63681694840a5a7d8ee41f19eb6>

## **BlueValue**

Presenters: Kara Coffey, Harte Research Institute for Gulf of Mexico Studies at Texas A&M University - Corpus Christi

**WEB:** <https://www.bluevalue.org/>

### **OVERVIEW**

For society to make informed decisions about sustainable use of the environment, directly linking the valuation of ecosystem services to society's needs is necessary.

### **INTENDED AUDIENCE**

Academic scientists, agency scientists, resource managers, decision-makers, NGOs, and highly interested citizens

### **MAIN USE**

The natural world supports, sustains, and enriches human life in numerous ways. Scientists and resource managers refer to these benefits as "ecosystem services". Bluevalue, previously known as GecoServ, is a searchable online database of ecosystem service valuation studies relevant to coastal habitats in the Gulf of Mexico region. Many scientists, economists, practitioners, and others around the world have conducted ecosystem valuation studies. However, it can be difficult and time-consuming for decision-makers to find and access the results of those studies. Bluevalue offers quick and easy access to actual ecosystem values in numbers. It houses literature from around the world that users can download, cite, bring to meetings, and share with others. Data stored in Bluevalue can be used to inform management decisions when the option to conduct a primary valuation study is not possible due to monetary or time constraints. The main goals of Bluevalue are to allow for the distribution and sharing of information on ecosystem service valuation, facilitate the application of the value transfer methodology, help managers include ecosystem services in the decision-making process, and identify current gaps in ecosystem service literature.

### **GEOGRAPHY AND SCALE**

The tool was initially intended for in the Gulf of Mexico, but now has international use.

### **ACCESSIBILITY**

This tool is available online only.

## **Geospatial Resilient Economic Development (GeoRED)**

Presenters: Diana Del Angel<sup>1</sup>, Chris Hale<sup>1</sup>, Katya Wowk<sup>1</sup>, James Gibeaut<sup>1</sup>

<sup>1</sup> Harte Research Institute for Gulf of Mexico Studies at Texas A&M University - Corpus Christi

**WEB:** <https://geored-dev.netlify.app/>

### **OVERVIEW**

GeoRED is designed to assist the communities of the Texas Coastal Bend in practicing smart growth practices by providing regional hazard, modeling, and economic development data.

### **INTENDED AUDIENCE**

The tool, in beta version, encourages using GIS mapping and analysis for more holistic risk assessment, social, economic, and ecological resilience planning, and community partnerships.

### **MAIN USE**



A region's social, ecological, and economic prosperity depends on its ability to prevent, withstand, and quickly recover from major disruptions. This has become clear in the Coastal Bend, a region of the Texas Coast that is still recovering from Hurricane Harvey but is also on the precipice of major industrial growth. The complexities brought by economic growth, environmental and climate change, and persistent and growing disparities in disadvantaged communities require holistic tools and data assessment that can help us see the tradeoffs made across management decisions, particularly those related to flood resilience, economic development, and natural infrastructure planning.

The GeoRED platform houses available data in separate data viewers for users to narrow their data searches to either 1) Hazard Response and Planning or 2) Social Vulnerability, and 3) Environmental Resilience 4.) Economic Development. The geospatial tools feature various ESRI visual products, such as Story Maps, Dashboard, and Experience applications, allowing users varying functionality and interaction with data. The modules are pre-populated with data noted as important to decision-making by experts engaged throughout the GeoRED development process. Users can also add or retract data layers from the modules to fit their queries.

#### **GEOGRAPHY & SCALE**

State of Texas and Texas counties.

#### **ACCESSIBILITY**

This tool is in beta version now, and is scheduled to launch in Fall of 2023.

## **Barataria Basin Interactive Ecosystem Status Report Viewer**

Presenters: Brittany Troast<sup>1</sup>, Steve Giordano<sup>2</sup>

<sup>1</sup> NOAA AOML

<sup>2</sup> NOAA SERO

**WEB:** N/A

#### **OVERVIEW**

This tool is a compact and interactive way to view the Barataria Basin Ecosystem Status Report (ESR) and provide feedback.

#### **INTENDED AUDIENCE**

Stakeholders of the Barataria Basin region who need quick and easy access to environmental, ecological, and socioeconomic trends to help identify and assess changes to the ecosystem associated with infrastructure development, restoration, and other resource management activities.

#### **MAIN USE**

Stakeholders can use this tool to select an indicator in the Barataria Basin Ecosystem Status Report (ESR) and interact with the provided figure. The Barataria Basin ESR is a report with over 100 indicators describing drivers, pressures, states, human activities, and human dimensions produced by NOAA's Integrated Ecosystem Assessment program. This tool would be useful to view a specific indicator more quickly to determine recent trends and data sources. Additionally, selecting multiple indicators can allow cross-comparison to understand potential relationships. Many indicators are

based on data provided by the previously identified stakeholders; this tool will help put their data in an integrated ecosystem perspective. This feature can elevate the functionality of the ESR by taking the next step in synthesizing the data. Receiving feedback on the indicators included in the ESR and how stakeholders may use those indicators while giving a platform to express suggestions for refinement is a critical part of the tool and the iterative process of integrative ecosystem assessment.

### **GEOGRAPHY & SCALE**

The Barataria Basin and the four parishes surrounding it, Jefferson, Lafourche, Plaquemines, and St. Charles.

### **ACCESSIBILITY**

This tool is in development.

## **Coastal Homeowners Resilience App**

Presenters: Brian Sherwood<sup>1</sup>, Karen Clark<sup>1</sup>, Roy Carrell<sup>1</sup>, Michael Christopher<sup>2</sup>

<sup>1</sup> Mississippi Department of Marine Resources

<sup>2</sup> Elemental Methods

**WEB:** N/A

### **OVERVIEW**

The Gulf Coast Homeowner's Handbook is a new mobile application that provides valuable severe weather and natural disaster preparation information for residents of coastal communities.

### **INTENDED AUDIENCE**

Gulf of Mexico coastal residents in Mississippi, Alabama, Louisiana, Texas, and Florida.

### **MAIN USE**

The Homeowner's Handbook has been an important informational resource for residents of Mississippi, Alabama, Louisiana, Texas, and Florida for over 10 years. The Handbooks were printed and available for residents to pick up at various locations throughout the Gulf Coast as a free resource. The new mobile app, Gulf Coast Homeowner's Handbook, continues to be a free resource, but will now be accessible at any time on Gulf Coast resident's smart devices. The mobile app will not only provide access to updated information on natural hazards and disaster preparation, but also provide in-app tools, such as shareable shopping lists and notes.

### **GEOGRAPHY & SCALE**

Gulf of Mexico.

### **ACCESSIBILITY**

In development for mobile devices.

## **GulfSeeLife**

Presenters: Brian Sherwood<sup>1</sup>, Karen Clark<sup>1</sup>, Roy Carrell<sup>1</sup>, Michael Christopher<sup>2</sup>

<sup>1</sup> Mississippi Department of Marine Resources

<sup>2</sup> Elemental Methods

**WEB:** <https://www.gulfseelife.org/>

### **OVERVIEW**

GulfSeeLife is a citizen scientist app used to document and monitor changes in coastal populations of marine organisms.

**INTENDED AUDIENCE**

Citizen scientists will be able to upload collected data, which will be made available to researchers and resource managers.

**MAIN USE**

The GulfSeeLife Team, comprised of the University of Mississippi (UM), the Mississippi Department of Marine Resources (MDMR), and Elemental Methods, have collaborated to develop and launch an app used to document and monitor changes in coastal populations of marine organisms. The GulfSeeLife Team will recruit and train citizen scientists in the use of a web portal and mobile phone app for marine assessment. This app will allow Gulf Coast citizens and visitors to a.) upload photos, measurements, GPS location and other data regarding specimens they have captured, observed, and identified b.) submit photos of endangered/unusual specimens of fish and other marine creatures for identification, c.) track the abundance and health of fish species of interest seasonally and regionally, d.) document invasive species in Gulf waters, and e.) monitor changes in the health of coastal ecosystems and shoreline erosional changes. The curated long-term data set would be available to researchers and resource managers for scientific management.

GulfSeeLife is a RESTORE Act project.

**GEOGRAPHY & SCALE**

Gulf of Mexico coastal zone.

**ACCESSIBILITY**

In development for mobile devices.

## **GlobeWatch: Advanced Remote Sensing Toolbox**

Presenters: Carl Ferraro, Stantech

**WEB:** [stantech.com](http://stantech.com)

**OVERVIEW**

GlobeWATCH™ utilizes earth observation datasets to provide a range of tools to help resource managers and others with a range of issues.

**INTENDED AUDIENCE**

State and Local Governments, Emergency Preparedness Agencies, Natural Resource Managers, Private Companies, NGOs, and others.

**MAIN USE**

CarbonWATCH™ enables the use of remote sensing to calculate carbon capture, expressed as carbon dioxide equivalents, on a project to landscape scale. This will allow natural resource managers, governmental entities, private companies, and NGOs, to quickly and efficiently calculate the efficacy of their carbon-capture efforts. This tool can evaluate potential existing conservation lands as well as restored habitats to calculate and track carbon capture and carbon offset goals and objectives.

**GEOGRAPHY & SCALE**

Global, from Project to Landscape Scale

**ACCESSIBILITY**

Online.