2021 GOMA Tools Café Descriptions

August 31, 2021 Webinar

Watersheds and Salinity

A word from our sponsor:
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Link to today’s blog to continue the discussion: go.esri.com/Esri0831

Educating and Engaging Communities with the Coast Watershed Game

Presenters & Institutions:
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- Tina Miller-Way, Ph.D., Assistant Director for Education, Mississippi-Alabama Sea Grant
- Brenna Sweetman, NOAA Office for Coastal Management, Brenna.sweetman@noaa.gov

Web address: https://seagrant.umn.edu/watershed-game

INTENDED AUDIENCE
The Watershed Game Coast Model is an education and engagement tool intended for use by educators and community engagement professionals to be used with local leaders, coastal stakeholders and youth.

MAIN USE
Coastal environments are economically valuable, biologically rich and densely populated. As a result, there are often competing and divisive interests among stakeholder groups. Small-group simulations like the Watershed Game help break down barriers related to engaging local community members on watershed planning and management while encouraging civility, dialogue and mutual respect. The Watershed Game Program is a proven, interactive nonpoint water pollution tool for local leaders and educators that increases participants’ understanding of the impacts that excess pollutants have on communities and natural resources. The game, available in a local leader and youth classroom version, enhances understanding of management challenges and solutions including practices, plans and policies to protect water resources while building collaboration skills across stakeholder groups. Based on requests from local leaders, educators, and water professionals, the Watershed Game has expanded to include models with a focus on priority issues of coastal and estuarine environments including water quality and resilience. This demonstration will provide an overview of the local leader and classroom versions of the Coast Model of the Watershed Game, and highlight how the game addresses water quality issues (including excess nitrogen, phosphorus, and sediment) and community resilience to flooding.

Game Goal
The goal of the game is to decrease nonpoint source pollution to meet a Clean Water Goal and to increase the community’s resilience to flooding with limited financial resources.
Learning Objectives
➔ Understand that all land uses within a watershed contribute pollutants and impact water quality.
➔ Identify specific sources of excess nutrients and sediment from each land use.
➔ Understand that all land uses are susceptible to flooding,
➔ Identify specific sites most vulnerable to damage from flooding.
➔ Apply “Tools” (plans, practices, and policies) to prevent or reduce nutrient and sediment pollution while increasing a community's preparedness for, and ability to respond to, flooding.
➔ Choose solutions based on available funds, benefits, and feasibility.

GEOGRAPHY AND SCALE
The tool is designed for application with all coastal and Great Lake communities across the U.S. Representatives in the Gulf of Mexico provided significant input into the creation and testing of the Coast Model of the Watershed Game.

ACCESSIBILITY
The tool is a large-format board game and the Coast Model will be available in printed form. For more information on the existing versions of the Watershed Game, visit watershedgame.umn.edu.

Expanded Coastal Salinity Index to Characterize Long-term Salinity Patterns in Estuaries

Presenters & Institutions:
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INTENDED AUDIENCE
The Coastal Salinity Index website’s intended audience is natural resource managers with state, local, and federal agencies and NGOs; researchers and students at academic institutions; and anyone who has a need to understand historic and current salinity fluctuations in coastal settings and estuaries for their work

MAIN USE
The Coastal Salinity Index (CSI) is a long-term monitoring tool that characterizes relative changes in coastal salinity regimes for salinity gages with long periods of record. It is a standardized probability index. A value of zero indicates equality with historical mean salinity for the gage data, and negative and positive values represent above and below normal salinity conditions, respectively. The CSI is site-specific based on local historic conditions and can be computed for multiple time intervals from 1- to 24-months, to help users evaluate responses at monthly to interannual time scales.
The CSI was developed to characterize coastal drought, monitor changing salinity conditions, and improve understanding of the effects of changing salinities on fresh and saltwater ecosystems, fish habitat, and freshwater availability for municipal and industrial use. The CSI uses the same classification scheme as the U.S. Drought Monitor for high saline (or drought) conditions and the inverse for wet conditions.

The website displays maps of CSI values at multiple time intervals, stacked graphs of CSI values at multiple intervals over time, and graphs of monthly CSI values over time. Real-time salinity, water temperature, and gage height data is also available in map and graph formats. Users can easily access gage information, input data, and CSI data via searchable table of all stations.

GEOGRAPHY & SCALE
The website provides CSI values for 103 real-time gages located from Maine to Texas and in Puerto Rico, using data available from the U.S. Geological Survey, National Estuarine Research Reserve System (NERRS), and Everglades National Park. Plans are to expand nation-wide.

ACCESIBILITY
The CSI tool is available online as a tool for stations collecting real-time salinity data and which have sufficiently long-term data to allow salinity characterization. The CSI tool is also available as an R package for users to apply to long-term data sets that may not be in available in real-time or publicly accessible.