2020 GOMA Tools Café Descriptions

"After the Flush" Septic System Program Website:
An interactive tool for education and action

Presenters: Whitney Elmore, County Extension Director/Urban Horticulture Agent (welmore@ufl.edu); Andrea Albertin, Water Resources Regional Specialized Agent; and Mary Lusk, Assistant Professor Urban Soil and Water Quality, University of Florida Institute of Food and Agricultural Sciences

Abstract
About 30% of Florida's population relies on septic systems to treat and dispose of household wastewater. This translates to 2.6 million systems discharging approximately 426 million gallons of wastewater per day to underlying soil and groundwater. On average, septic systems remove 30% of nitrogen flowing into them and are identified as important sources of N to groundwater particularly when improperly sited or failing. If septic systems contribute at least 20% of the N load in areas with a Basin Management Action Plan (BMAP), a septic system remediation plan goes into place. This includes connecting homes to sewer systems and replacing conventional systems with advanced N-removal technology, both of which are costly for local governments and residents.
In response, UF/IFAS Extension agents and research faculty developed a septic system educational program called "After the Flush" which included the production of an interactive website. The website is a 'Septics 101' for residents, aimed to increase knowledge about septic system function and best practices, advanced onsite N-removal technology, and connections between septics and water quality. It addresses septic system regulations established by the 2016 Florida Water Bill. The program and online tool respond to needs identified by UF/IFAS Extension agents in a 2017 survey concerning septic system education. Of 87 respondents, 55 agents (63%) were interested in printed and online information to share with clients, 34 (39%) were interested in teaching residents about connections between septic systems and potential water quality impacts, and 26 (30%) were interested in hosting or co-teaching workshops on systems and how to properly maintain them.

INTENDED AUDIENCE
Homeowners and Extension Agents

MAIN USE
The interactive website includes educational videos, fact sheets, and content written by UF/IFAS Extension Agents as well as information from the Florida Department of Health and Florida Department of Environmental Protection. It is designed to house the relevant information concerning environmental impacts of septic systems, advanced treatment systems, the Florida

Water Bill requirements for Basin Management Action Plans and Priority Focus Areas and the new septic system permitting requirements mandated by the legislation. Homeowners would use the material to understand their responsibilities in septic system maintenance and replacement/repair of conventional systems. The website also houses program materials, surveys, and technical information for Extension Agents to download (privately) for use in septic system programming.

GEOGRAPHY & SCALE
The website tool is designed for use state-wide as septic systems are ubiquitous. It is available to anyone on the world-wide web, and the tool is applicable across all demographics and rural, suburban and urban communities along the coast to the central inland portion of the state.

ACCESSIBILITY
The website is available for free at https://www.aftertheflushfl.com/. Extension Agents can request access, via email request, to programmatic materials. Printed versions are also available on request for fact sheets and legislative materials. Materials are also available in Spanish.

ExtractX™ Imagery Analysis Tool

Presenters: Carl Ferraro, Senior Environmental Scientist, Stantec, carl.ferraro@stantec.com
Grant Wiseman, Remote Sensing Scientist, Stantec
Steve Mathies, Vice President/Global Practice Leader, Coastal Restoration, Stantec

INTENDED AUDIENCE:
- Habitat Restoration Programs
- State and Federal Water Quality and Natural Resource Agencies
- Industry
- Academia

MAIN USE:
ExtractX is an imagery and data analysis tool. This innovative approach combines high-resolution image datasets with object-based image analysis (OBIA) for more accurate and efficient monitoring. Utilizing ExtractX™, clients can increase the spatial scale and extent of assessments while reducing cost and health and safety risk to field staff.
ExtractX analyzes imagery and data collected by satellites, planes or unmanned aerial vehicles (UAVs) using OBIA. OBIA is a form of artificial intelligence, automatically breaking down images into objects using color, texture, shape, size and proximity characteristics. It essentially does what the human brain does instantaneously by clustering image pixels with similar properties to form a series of objects. Properly configured OBIA segmentation does in mere seconds what would take a photo interpreter hundreds of hours to complete. Unlike traditional remote sensing classification, OBIA allows for highly sophisticated decision-tree classification processes, resulting in finite and detailed class generation.
Potential uses include:

- Vegetation rehabilitation monitoring and assessment.
- Vegetation impact assessment.
- Vegetation cover and type identification.
- Invasive species detection.
- Disturbance feature delineation.
- Habitat-related feature identification.
- Contamination and Construction impacts.
- Construction progress monitoring.
- Disaster mitigation tracking.
- Water quality (TSS, Temperature and Dissolved Organic Matter (DOM))
- Wetland hydrology monitoring
- Shoreline erosion, mitigation, management tracking

This tool is relevant to the activities and interests of most of the GOMA PITs, including Coastal Resilience, Data & Monitoring, Habitat Resources, Water Resources and Wildlife and Fisheries.

GEOGRAPHY & SCALE:
ExtractX can analyze environmental issues for any location on earth using a wide variety imagery sources ranging in resolution from inches to miles. LiDAR elevation and SONAR bathymetry datasets can be incorporated into any project assessment. Using historical geo-spatial databases ExtractX can quantitatively perform change detection analyzes dating back years or decades.

ACCESSIBILITY:
ExtractX is a service provided by Stantec's Remote Sensing Center of Excellence. We work interactively with our clients to ensure we provide them with highest degree of accuracy and precision for their projects. ExtractX allows us to work digitally on projects from around the world while reducing field work and inherent health & safety risk.

Marine Minerals Information System

Presenter: Brian Cameron, BOEM, brian.cameronjr@boem.gov

WEB: https://mmis.doi.gov/BOEMMMIS/

INTENDED AUDIENCE
The Marine Minerals Information System was designed for Federal, State, and Local governments, Organizations such as Regional Planning Bodies, Industry and Business Community, Academia, Non-Governmental Organizations, Tribes, and the General Public.

MAIN USE
The MMIS is a tool to support a National Offshore Sand/Sediment Inventory and foster access to the Nation's offshore mineral resources. It serves current and historical marine minerals data

and information for the Atlantic, Gulf of Mexico, and Pacific. It is equipped with geodatabase and query tools which lets users select sites and parameters to further analyze. The goal is for coastal managers to access the MMIS and identify sediment sources on the Outer Continental Shelf that could be used for managing coastal recovery and planning coastal resilience projects.

In addition, it helps users of the outer continental shelf identify potential multiple use conflicts through the location of oil and gas infrastructure, underwater cables, and dredge pipelines. This would be useful to site future artificial reef deployment sites as well as locations for aquaculture activities.

GEOGRAPHY & SCALE
The main focus of the MMIS tool is within the Federal waters of the United States but there has been data shared by state partners for resources within state waters.

ACCESSIBILITY
The tool can be accessed via online at https://mmis.doi.gov/BOEMMMIS/.

October 20, 2020 Webinar

Gulf TREE, your ultimate climate resilience guide

Presenter(s): Mikaela Heming, Renee Collini, Sara Martin, Sonia Vedral
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Web Address: www.gulfTREE.org

INTENDED AUDIENCE
This resource is relevant for users of all experience levels across the climate resilience spectrum including, but not limited to, natural resource professionals, planners, local and regional government agencies, Extension and outreach professionals, researchers, and restoration and conservation specialists.

MAIN USE
Gulf TREE (Tools for Resilience Exploration Engine) is a filter-based search engine designed to match users with relevant climate resilience tools quickly, easily, and confidently. With over 100 tools relevant to the Gulf of Mexico (and more being added all the time), Gulf TREE sorts through the plethora of options to match users with a climate resilience tool that meets their specific criteria. The web resource was created by the Northern Gulf of Mexico Sentinel Site Cooperative, Gulf of Mexico Alliance, and Gulf of Mexico Climate and Resilience Community of Practice. Developed through an end-user driven process, Gulf TREE is user-friendly despite

the complex nature of its content and was created to be a solution to common obstacles faced by Gulf of Mexico stakeholders interested in climate resilience.

GEOGRAPHY & SCALE
Many tools on Gulf TREE are national in scale, but there are also many that are specific to regional, state, or local (county-level or occasionally smaller) geographies. Gulf TREE includes all climate resilience tools relevant to Gulf of Mexico shoreline and watershed counties.

ACCESSIBILITY
Gulf TREE is available online at www.gulfTREE.org and is accessible by most web browsers. For full functionality, be sure to view the web resource on a computer. Due to the complex nature of Gulf TREE, we can only provide limited functionality on the mobile version and some tablet computers do not auto-display properly.

Gulf of Mexico Research Initiative Information & Data Cooperative (GRIIDC) Data Management System

Presenter: Rosalie Rossi
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Harte Research Institute for Gulf of Mexico Studies, Texas A&M University-Corpus Christi,
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WEB ADDRESS: https://data.gulfresearchinitiative.org/

INTENDED AUDIENCE
Gulf of Mexico Research Initiative (GoMRI) funded investigators and administration; RESTORE Act Centers of Excellence funded investigators and administration; academic researchers; natural resource managers; policy makers; emergency responders; non-governmental organizations; and the general public.

DESCRIPTION/MAIN USE
The tool was initially designed to manage and distribute data generated by Gulf of Mexico Research Initiative (GoMRI) funded projects. The data management applications that assist with planning, documenting, and submitting data to GRIIDC are designed for investigators and data managers. GRIIDC also issues a DOI for discrete data packages that provides researchers with a citable reference for their efforts. The system allows data submissions to be tracked through the data package workflow by both investigators and program administration via the dataset monitoring application. The GRIIDC search and dataset landing pages are designed for anyone who is interested in obtaining data about the Gulf of Mexico, including academic researchers, natural resource managers, policy makers, emergency responders, non-governmental organizations, and the general public. These tools are available to GoMRI, Florida RESTORE Act Centers of Excellence Program (FLRACEP), Mississippi Based RESTORE Act Center of Excellence (MBRACE), the National Academy of Science Gulf Research Program, and the Harte Research Institute for Gulf of Mexico Studies. The GRIIDC program is also 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 Louisiana and Alabama RESTORE Act Centers of Excellence, oil and gas industry, and others will allow more investigators to use these tools to manage and share their data using the GRIIDC system.

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. 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.

ACCESSIBILITY
This tool is available online only.

The Deepwater Horizon Project Tracker

Presenter: Jes Skillman
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jskillman@ducks.org

Web address: www.dwhprojecttracker.org

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.