

# 2020 GOMA Tools Café Descriptions

October 6, 2020 Webinar

## **“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](mailto: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 septic systems 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](mailto: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](mailto: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/>.