

Special Interest Meetings
Monday February 11, 2019

8:30 to 11:30 a.m.

3D Nation

High Resolution Land Cover Mapping Now and Tomorrow

Data Discovery and Dissemination During Disasters

1:00 to 4:00 p.m.

Digital Coast Resources to Jumpstart Open Space Preservation Analysis for Community
Rating System (CRS) Credit

Open Source Software for GIS and Remote Sensing

Unmanned Aircraft Systems for Coastal Resource Management

Developing Decision Support Tools for NOAA's Water Initiative

3D Nation

3D Nation is the federal elevation data theme, consisting of the topography-focused 3D Elevation Program (3DEP) and the bathymetry focused Interagency Working Group – Ocean and Coastal Mapping (IWG-OCM), with synergistic interests at the coast. This session provides a venue to learn about the activities and products of the 3D Nation and an opportunity to provide feedback to agencies on current and future elevation needs. Topics of discussion include:

- Overview of 3D Nation
- 3D Nation benefits study, including status and preliminary results. Additional opportunities for input will be given.
- Products being produced for public use
- Data access options for topography, bathymetry, and topo/bathy. Participant input on data access needs and potential future methods.
- Federal acquisition planning, 3DEP BAA, state plans – how does it all work?
- Crowd-sourced elevation data
- Planning for the future – what does it look like and how do we get there.

Learning objectives:

- Participants will learn about the federal elevation structure and how they can make use of it
- Participants will learn how other people are using elevation data
- Participants will learn how they can get multiple types of elevation data and derived products
- Participants will learn, and potentially influence, the plans for elevation acquisition and access in the future

The SIM will consist of both presentations and breakout sessions for discussion.

Target audience: Anyone with involvement in elevation (topography or bathymetry).

Participants should have a good working knowledge of where elevation fits into their work.

High Resolution Land Cover Mapping Now and Tomorrow

Current, accurate land cover and change information is a common foundational data set that can be used to address a wide range of management issues, from flooding risk and natural infrastructure to policy evaluation and land use planning. Knowing what exists on the ground gives managers and planners more information. And, the better that data, the better their understanding.

This session will focus on discussing recent advancements in mapping technology (including Artificial Intelligence), the current state of NOAA's Coastal Change Analysis Program (C-CAP) mapping efforts, hands-on exploration of several example land cover products, uses of local scale land cover information, and discussion of needs expressed from those attending the workshop (through interactive polling and group discussion).

Learning Objectives:

- Introduce attendees to some recent advancements in, and current agency efforts related to, high resolution land cover mapping.
- Allow attendees to explore multiple example of land cover data at various scales.
- Discuss uses of, and various needs attendees have/know of associated with, land cover products and information.

Target Audience: Coastal managers and/or planners who would be interested in recent advancements related to the production of high resolution land cover data, or its use at the local scale.

Data Discovery and Dissemination During Disasters

NOAA and our emergency response partners around the nation need to be in the best position possible to respond to coastal threats quickly, safely, and effectively. Although proper situational awareness is essential for an effective response operation, access to key spatial data can be difficult during rapidly evolving events. To help prepare for future responses session speakers will focus on planning and training, field data collections, access to existing data portals, and lessons learned from past incidents.

Learning Objectives

- Improve understanding and awareness of data sets available to assist in responses
- Promote best practices for data creation, sharing, and discoverability relative to Incident Command Post needs
- Help identify response community needs and work together with participants on future solutions

The SIM will consist of session speakers, tool demonstrations and community discussion.

Target audience: Planning and Emergency Response community members, GIS coordinators and Analysts.

Digital Coast Resources to Jumpstart Open Space Preservation Analysis for Community Rating System (CRS) Credit

Through FEMA's Community Rating System (CRS) program, communities can increase their resilience to flooding while lowering flood insurance rates by engaging in activities that exceed minimum floodplain management requirements. This interactive session primarily focuses on the application of GIS tools to support Activity 420 Open Space Preservation (OSP) within the CRS program, where communities have the potential to earn up to 2,870 CRS credits by preserving open space and maintaining or restoring the natural functions of floodplains.

Through hands-on exercises, participants will learn how to use The Association of State Floodplain Managers and Coastal States Organization's [Green Guide](#), NOAA's [Open Space Preservation How-To and GIS workflow](#), and The Nature Conservancy's [Community Rating System Explorer](#). Attendees are encouraged to bring their own community GIS data and software and will have the unique opportunity to have experts guide them through best practices to maximize their community's participation in the CRS program, perform Open Space Preservation GIS analyses, and explore decision support tools to help guide their CRS planning process so they achieve economic and ecological benefit.

Learning Objectives:

- Use GIS to prioritize eligible open space preservation areas and calculate potential credit, either with attendees' own spatial data or through a live demo of OSP analysis with example GIS datasets.
- Apply knowledge gained during the workshop to facilitate the CRS application process for open space preservation credit
- Improve understanding of Activity 420 and how it can help communities increase resilience and potentially earn CRS credit.
- Identify how other communities have earned CRS credit for Activity 420 OSP and learn best practices

The SIM will consist of both demonstration and hands-on activities using the Digital Coast Partner CRS resources.

Target audience: GIS coordinators and analysts. All participants would require some knowledge of the CRS and have a working knowledge of GIS. This is not a primer on the CRS. A GIS data requirement list will be provided prior to the workshop for attendees who plan to bring their own laptop with GIS data and software.

Open Source Software for GIS and Remote Sensing

In today's realm of GIS and remote sensing, professionals have several software packages available to use, including both licensed and open source software. Both provide advantages and disadvantages unique to themselves. This SIM is intended to introduce beginner to intermediate GIS and remote sensing users to the world of open source software and to demonstrate how to integrate open source software solutions into their own workflows.

Learning Objectives:

- Introduction to open source software packages including QGIS, Orfeo ToolBox, GRASS and SAGA
- Demonstration of how popular scripting languages such as Python and R can be used with geospatial data in an open source environment
- The advantages and disadvantages of open source software solutions
- Hands on data handling and exploration to include working with both raster and vector data types to address real world applications
- Examples of how to document methodologies and code through the use of Jupyter Notebooks
- Resources for continuing development as an open source software user

Target Audience: Beginner to Intermediate GIS and remote sensing users

Unmanned Aircraft Systems for Coastal Resource Management

Unmanned Aircraft Systems (UAS) provide a range of remote sensing solutions for observing and mapping in the coastal zone. These technologies offer new insights into real-world phenomena at scales that are difficult to observe using either traditional field-based approaches or aircraft and satellite-based observing systems. UASs allow us to bridge this gap and acquire data in a more flexible and user-defined manner...or do they? Participants in this SIM will share their experiences with UAS and learn about the challenges and successes of using these exciting and innovative technologies for coastal management.

Learning Objectives:

- To review recent UAS applications in the coastal zone and discuss the state of the technology
- To weigh the many factors when considering investments in UAS technology
- To understand the limitations and logistical challenges associated with UASs
- To explore and assess various data products from real-world UAS missions

Target audience: Anyone involved in the collection or analysis of large scale remote sensing data in the coastal zone, including researchers, stewardship coordinators, and GIS analysts. Participants are encouraged to bring their own laptop equipped with GIS or UAS processing software.

Developing Decision Support Tools for NOAA's Water Initiative

Too much water, too little water, or water of poor quality endangers life, property, economies, and ecosystems. In response, NOAA has come together, with all levels of government; academic, non-governmental, and private sector organizations; and stakeholders to implement the NOAA Water Initiative (NWI). Central to this cross-agency effort is the provision of timely, accurate data and information to support water-related decisions. This special interest meeting (SIM) will introduce efforts to provide data and information products through the National Water Model (NWM), and decision support tools from the Office for Coastal Management. Through interactive demonstrations, participants will learn how these products work and how communities can leverage and apply the information from these efforts. Participants will then be engaged in a facilitated dialog to identify opportunities to support these efforts through the development of new decision support products and services that address water-related issues (i.e. flooding, drought, and water quality) in the coastal zone.

Learning Objectives:

- Describe the goals and objectives of the NOAA Water Initiative and National Water Model and identify opportunities to collaborate
- Identify current information gaps related to water issues
- Apply the visualization and decision support products demonstrated within the session to water-related issues in their communities

Target Audience: Geospatial analysts, application (tool) developers, and/or any organization that supports coastal communities in their efforts to address water-related issues.