

Special Interest Meetings
Monday February 11, 2019

8:30 to 11:30 a.m.

- **3D Nation**
- **High-Resolution Land Cover Mapping Now and Tomorrow**
- **Exploring Cross-Program Geospatial Solutions in NOAA's Coral Jurisdictions**
- **Data Discovery and Dissemination during Disasters**

1:00 to 4:00 p.m.

- **Digital Coast Resources to Jump-Start Open Space Preservation Analysis for Community Rating System (CRS) Credit**
- **Technical Training for Improving the Application of CMECS Data to Coastal Management**
- **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 on Ocean and Coastal Mapping, with synergistic interests at the coast. This session provides a venue to learn about the activities and products of 3D Nation and an opportunity to provide feedback to agencies on current and future elevation needs.

Topics of Discussion:

- Overview of 3D Nation
- 3D Nation benefits study, including status and preliminary results, with additional opportunities for input
- 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 broad agency announcement, 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 the data, the better their understanding.

This session will focus on discussing 1) recent advancements in mapping technology (including artificial intelligence), 2) the current state of NOAA's Coastal Change Analysis Program (C-CAP) mapping efforts, 3) several example land cover products (hands-on exploration), 4) uses of local-scale land cover information, and 5) 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 examples of land cover data at various scales
- Discuss uses of land cover products and information, and various needs attendees have or know of for these products

Target Audience: Coastal managers or planners who would be interested in recent advancements in the production of high-resolution land cover data or the use of these data at the local scale.

Exploring Cross-Program Geospatial Solutions in NOAA's Coral Jurisdictions

The NOAA Office for Coastal Management's Geospatial Solutions Program and Coral Reef Conservation Program generate and publish a wide range of spatial data and applications. These products often have significant overlap in their geographic scope, as well as in the research topics and management issues that they can be applied to. Given these intersections, there may be opportunities to align resources and develop data services and tools that would greatly enhance the work being done throughout NOAA's seven coral reef management jurisdictions in the Pacific, Atlantic, and Caribbean.

This special interest meeting will begin a discussion among NOAA programs, partners, and coral jurisdiction stakeholders to explore common ground and needs for geospatial data services and applications. With the range of programs conducting work related to coral ecosystems, the conversation has considerable potential for expansion from both an organizational and geographic perspective, and would be relevant to additional programs, including the National Centers for Coastal Ocean Science (NCCOS), Coastal Zone Management (CZM), the National Estuarine Research Reserve System, and Fisheries Science Centers.

Examples of cross-program geospatial applications in coral environments may be shared to guide the discussion, including recent instances in the Pacific in which Coral Reef Conservation Program and CZM projects leveraged NCCOS benthic maps, the Coastal Change Analysis Program, and the Office for Coastal Management's participatory mapping guidance to implement coastal and marine spatial planning.

Learning Objectives:

- Participants generate an initial understanding of coral-related data sets and geospatial tools that exist among the seven jurisdictions. This could include a rudimentary assessment of gaps in geographic information and exploring the feasibility of conducting an inventory or geospatial needs assessment for coral ecosystems.
- Participants outline a list of (a) data sets, (b) tools and apps, and (c) platforms or portals that have been most useful to coral jurisdictions, and identify areas of work among corals and geospatial where data services or tools overlap.
- Participants identify the divisions and programs in NOAA and partner agencies and organizations that have a critical voice in this discussion (e.g., FEMA, Environmental Protection Agency, The Nature Conservancy, Digital Coast Partners, etc.). Roles and resources that each might add to a collaboration are outlined.

Target Audience: jurisdictional coastal managers, NOAA data managers (NCCOS, CZM, Coral Reef Conservation Program, National Estuarine Research Reserve System, National Coral Reef Monitoring Program), and data tool designers.

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 special interest meeting 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 Jump-Start 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 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. They 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 analysis with example GIS data sets
- 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 and learn best practices

The special interest meeting will consist of both demonstration and hands-on activities using the Digital Coast Partnership CRS resources.

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

Technical Training for Improving the Application of CMECS Data to Coastal Management

This special interest meeting will engage the audience in an interactive discussion with coastal management and training staff members from Oregon, NOAA, and [other partners] about developing educational resources that help build capacity for Coastal and Marine Ecological Classification Standard (CMECS) applications in regional and national habitat management.

The meeting will have three elements:

1. Oregon Coastal Management Program and South Slough Research Reserve coastal training staff members will recap Oregon's process for providing a CMECS training, with a close look at the rationale, materials, consideration of audience needs, and ways CMECS GIS data and web mapping applications were confidently applied in a regulatory application through this training.
2. Participants will explore ways in which future CMECS training and education can be incorporated into an expanded or extended version of the Oregon process for other regions or national applications. For example, the U.S. Army Corps of Engineers will use CMECS to revise its national 20-year dredged materials management plan in the Pacific Northwest to inform the disposition of sand dredged and mitigate habitat loss along the shore zones of the lower Columbia River.
3. A final element will include audience-driven discussions on information needs for CMECS application. This will leverage the CMECS Community of Practice Confluence site as a way to build a network of expertise.

The outcome of the meeting will be to strengthen the CMECS user community's capacity to support each other and to improve the coastal manager's ability to apply CMECS to coastal management decision-making.

Learning Objectives:

- CMECS familiarity
- Methods for enhancing the ability to apply CMECS data confidently
- General sharing of best practices related to data development
- Opportunity to shape future CMECS training and technical assistance

Target Audience: CMECS data developers and mappers and coastal managers interested in how CMECS could contribute to their administrative activities.

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 special interest meeting 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. UAS allow us to bridge this gap and acquire data in a more flexible and user-defined manner . . . or do they? Participants in this special interest meeting 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 UAS
- 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, stakeholders, and academic, nongovernmental, and private-sector organizations to implement the NOAA Water Initiative. Central to this cross-agency effort is the provision of timely, accurate data and information to support water-related decisions.

This special interest meeting will introduce efforts to provide data and information products through the National Water Model and decision-support tools from the NOAA 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 dialogue 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 a community.

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